

# EXCESSIVE SPECULATION IN THE WHEAT MARKET

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## HEARING

BEFORE THE

PERMANENT SUBCOMMITTEE ON INVESTIGATIONS

OF THE

COMMITTEE ON

HOMELAND SECURITY AND

GOVERNMENTAL AFFAIRS

UNITED STATES SENATE

ONE HUNDRED ELEVENTH CONGRESS

FIRST SESSION

\_\_\_\_\_  
JULY 21, 2009  
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Available via <http://www.gpoaccess.gov/congress/index.html>

Printed for the use of the Committee on Homeland Security  
and Governmental Affairs



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# CONTENTS

Opening statements:	Page
Senator Levin .....	1
Senator Coburn .....	10
Senator Collins .....	13
Senator Tester .....	15
Senator Bennet .....	15
Prepared statement:	
Senator McCaskill .....	63

## WITNESSES

TUESDAY, JULY 21, 2009

Hon. Gary Gensler, Chairman, Commodity Futures Trading Commission .....	16
Thomas Coyle, Vice President and General Manager, Chicago and Illinois River Marketing LLC, Nidera, Inc., and Chairman, National Grain and Feed Association .....	33
Hayden Wands, Director of Procurement, Sara Lee Corporation, and Chair- man, Commodity and Agricultural Policy, American Bakers Association .....	36
Mark Cooper, Director of Research, Consumer Federation of America .....	38
Steven H. Strongin, Head of the Global Investment Research Division, The Goldman Sachs Group, Inc. ....	39
Charles P. Carey, Vice Chairman, CME Group .....	52

## ALPHABETICAL LIST OF WITNESSES

Carey, Charles P.:	
Testimony .....	52
Prepared statement .....	143
Cooper, Mark:	
Testimony .....	38
Prepared statement .....	87
Coyle, Thomas:	
Testimony .....	33
Prepared statement .....	71
Gensler, Hon. Gary:	
Testimony .....	16
Prepared statement .....	64
Strongin, Steven H.:	
Testimony .....	39
Prepared statement .....	129
Wands, Hayden:	
Testimony .....	36
Prepared statement .....	76

## APPENDIX

“Excessive Speculation in the Wheat Market,” Majority and Minority Staff Report, Permanent Subcommittee on Investigations, June 24, 2009 .....	159
---	-----

## EXHIBITS

1. <i>Outstanding Chicago Wheat Futures Contracts Purchased by Commodity Index Traders, 2004–2009</i> , chart prepared by the U.S. Senate Permanent Subcommittee on Investigations .....	425
---	-----

# IV

	Page
2. <i>Chicago Wheat Prices, Daily Difference Between Futures and Cash Price (Daily Basis)</i> , chart prepared by the U.S. Senate Permanent Subcommittee on Investigations .....	426
3. <i>Chicago Wheat Prices, Difference Between Futures Price and Cash Price (Basis) in Chicago at Contract Expiration</i> , chart prepared by the U.S. Senate Permanent Subcommittee on Investigations .....	427
4. <i>Example of a Hedge With Convergence</i> , chart prepared by the U.S. Senate Permanent Subcommittee on Investigations .....	428
5. <i>Example of a Hedge Without Convergence</i> , chart prepared by the U.S. Senate Permanent Subcommittee on Investigations .....	429
6. <i>Cash Price of Wheat (Soft Red Winter Wheat)</i> , chart prepared by the U.S. Senate Permanent Subcommittee on Investigations .....	430
7. Document entitled <i>The Case for Commodities as an Asset Class</i> , prepared by Goldman Sachs and Co., June 2004 .....	431
8. Responses to supplemental questions for the record submitted to Charles P. Carey, Vice Chairman, CME Group .....	498
9. Responses to supplemental questions for the record submitted to Steven H. Strongin, Head of the Global Investment Research Division, The Goldman Sachs Group, Inc. ....	503
10. Responses to supplemental questions for the record submitted to Mark Cooper, Director of Research, Consumer Federation of America .....	507
11. Responses to supplemental questions for the record submitted to The Honorable Gary Gensler, Chairman, Commodities Futures Trading Commission .....	510

## **EXCESSIVE SPECULATION IN THE WHEAT MARKET**

**TUESDAY, JULY 21, 2009**

U.S. SENATE,  
PERMANENT SUBCOMMITTEE ON INVESTIGATIONS,  
COMMITTEE ON HOMELAND SECURITY  
AND GOVERNMENTAL AFFAIRS,  
*Washington, DC.*

The Subcommittee met, pursuant to notice, at 2:34 p.m., in room SD-342, Dirksen Senate Office Building, Hon. Carl Levin, Chairman of the Subcommittee, presiding.

Present: Senators Levin, Tester, Bennet, Coburn, and Collins.

Staff Present: Elise J. Bean, Staff Director and Chief Counsel; Mary D. Robertson, Chief Clerk; Rachel Siegel, Detailee (GAO); David Katz, Counsel; Allison Murphy, Counsel; Christopher Barkley, Staff Director to the Minority; Timothy R. Terry, Counsel to the Minority; Marcelle John, Detailee (IRS); Kevin Wack, Congressional Fellow; Sam Katsin, Intern; Peter Kenny, Law Clerk; Malachi Zussman-Dobbins, Intern; Melissa Mann (Senator McCaskill); Nichole Distefano (Senator McCaskill); Jason Rosenberg (Senator Tester); Rachel Clark (Senator Tester); Catharine Ferguson (Senator Bennet); Brandon Milhorn (HSGAC/Senator Collins); Asha Mathew (HSGAC/Senator Collins); and Mary Beth Carozza (HSGAC/Senator Collins).

### **OPENING STATEMENT OF SENATOR LEVIN**

Senator LEVIN. Good afternoon, everybody. The Subcommittee will come to order.

For more than 5 years now, this Subcommittee has been taking a hard look at how our commodity markets function. In particular, we have examined how excessive speculation in those markets has distorted prices, overwhelmed normal supply and demand factors, and can push up prices at the expense of consumers and American business.

In 2006, for example, the Subcommittee released a report which found that billions of dollars in commodity index trading on the crude oil market had pushed up futures prices in 2006, causing a corresponding increase in cash prices, and were responsible for an estimated \$20 out of the then \$70 cost for a barrel of oil. A 2007 report showed how a single hedge fund named Amaranth made huge trades on the natural gas market, pushed up futures prices, and increased natural gas prices for consumers and American business.

At today's hearing, our focus is on wheat. Using the wheat market as a case history, we show how commodity index trading, in the aggregate, can cause excessive speculation and price distortions. As in our prior investigations, this examination has taken us into the upside down world of financial engineering that we find ourselves in today, where instead of talking about supply and demand affecting wheat prices, we have to talk about the impact of complex financial instruments like commodity indexes, swaps, and exchange traded funds, and what happens when speculators buying these derivative instruments begin to dominate a futures market instead of the commercial businesses buying futures to hedge against price changes.

These are complicated issues. It took the Subcommittee an entire year to compile and analyze millions of trading records from the three U.S. futures markets where wheat is traded, including the largest exchange of the three in Chicago. We also interviewed numerous experts, researched the issues, and released a 247-page report explaining our findings.

Our report, which was issued by myself and Senator Coburn last month, concludes that the huge number of wheat futures contracts being purchased by derivative dealers selling commodity index instruments have, in the aggregate, constituted excessive speculation in the Chicago wheat market, resulting in unwarranted price changes and an undue burden on commerce.

Our report presents a variety of data in support of its findings, but, necessarily, I can highlight only a few key points here. The first point is the huge growth in commodity index investments over the past 5 years. According to estimates by the Commodity Futures Trading Commission (CFTC), about \$15 billion was invested in commodity indexes in 2003. By mid-2008, that figure had grown to \$200 billion, a 13-fold increase.

Commodity indexes are mathematical constructs whose value is calculated from the value of a specified basket of futures contracts for agricultural, energy, and metals commodities. When the prices of the selected futures go up, the value of the index goes up. When the futures prices go down, the index value goes down.

Speculators don't invest directly in a commodity index, since the index itself is nothing more than a number that constantly changes. Instead, they buy financial instruments—derivatives—whose value is linked to the value of a specified commodity index. In essence, speculators place bets on whether the index value will go up or down. They place those bets with derivative dealers, usually by buying a financial instrument called a "swap" whose value is linked to the commodity index. The derivative dealer charges a fee for entering the swap, and then effectively holds the other side of the bet. When the index value goes up, the speculator makes money from the swap. When the index value goes down, the derivative dealer makes money from the swap.

Most derivative dealers, however, don't like to gamble on these swaps; instead they typically hedge their bets by buying the futures contracts on which the index and related swaps are based. Then if their side of the swap loses value, they offset the loss with the increased value of the underlying futures. By holding both the swap and the futures contracts upon which the swap is based, de-

derivative dealers are protected from financial risk whether futures prices go up or down. By taking that position, derivative dealers also avoid becoming pure speculators in commodities; instead, they facilitate the speculative bets being placed by their clients, while making money off the fees paid for the commodity index swaps.

Since 2004, derivative dealers buying futures to offset the speculative bets made by their clients have begun to dominate U.S. commodity markets, buying a wide range of futures for crude oil, natural gas, gold, corn, wheat, and other commodities. This chart, Exhibit 1,<sup>1</sup> shows the impact on the Chicago wheat futures market alone. It shows that derivative dealers making commodity index trades have bought increasing numbers of wheat futures, with their aggregate holdings going from 30,000 wheat contracts in 2004 to 220,000 in 2008, a seven-fold increase in 4 years. Derivative dealers making commodity index trades now hold nearly half of the outstanding wheat futures—long open interest—on the Chicago Exchange.

Derivative dealers seeking to offset the speculative bets of their clients have created a new demand for futures contracts. Their objective is simple: to buy a sufficient number of futures to offset their financial risk from selling commodity index swaps to their clients. Their steady purchases of futures to buy wheat have had a one-way impact on futures prices—pushing the prices up. In addition, their purchases have created a steady demand for wheat futures, without creating a corresponding demand in the cash market. The result in recent years has been Chicago wheat futures prices which are routinely much higher than wheat cash prices, with a persistent and sizable gap between the two prices.

Now, the next two charts show how this gap has grown over time. The first chart, Exhibit 2,<sup>2</sup> looks at the day-to-day difference between wheat futures and cash prices in the Chicago wheat market over the last 9 years. It shows that, from 2000 to 2005, the average daily difference between the average cash and futures price for wheat in the Chicago market, also called the “basis,” ranged between 0 and 50 cents. In 2006, that price gap or basis began to increase, in sync with the increasing amount of commodity index trading going on in the Chicago wheat market. By mid-2008, when commodity index traders held nearly half of the outstanding wheat futures—long open interest—on the Chicago Exchange, the price gap had grown to between \$1.50 and \$2 per bushel, a huge and unprecedented gap.

Now, the next chart, which is Exhibit 3<sup>3</sup> in the books, shows the same pattern when the Chicago wheat futures contracts expired. Wheat futures contracts are available in only 5 months of the year—March, May, July, September, and December. This chart looks at the expiration date for each of those five contracts from 2005 to 2008 and shows the gap between the final futures price and the cash price on that date. The data shows that this gap, or the basis, grew from 13 cents per bushel in 2005, to 34 cents in 2006, to 60 cents in 2007, to \$1.53 in 2008, a more than ten-fold increase in 4 years, providing clear evidence of a dysfunctional

<sup>1</sup> See Exhibit No. 1, which appears in the Appendix on page 425.

<sup>2</sup> See Exhibit No. 2, which appears in the Appendix on page 426.

<sup>3</sup> See Exhibit No. 3, which appears in the Appendix on page 427.

market. And, again, this increasing price gap took place at the same time commodity index traders were increasing their holdings to nearly half of the wheat futures contracts on the Chicago Exchange.

To understand the significance of this price gap, we need to take a step back and focus on the purpose of commodity markets. Commodity markets have traditionally had two primary purposes: first, to help farmers and other businesses establish a price for the delivery of a commodity at a specified date in the future; and, second, to help them hedge against the risk of price changes over time.

Futures prices are the result of numerous traders making individual bids to buy or sell a standard amount of the commodity at a specified date in the future. That date can be 1 month, 6 months, or even years in the future. At the same time this bargaining is going on to establish prices for the future delivery of a commodity, businesses are also bargaining over prices for the immediate delivery of that commodity. A price for the immediate delivery of a commodity is referred to as the cash price. Traditionally, futures prices and cash prices have worked together. That is because, as the delivery date in a futures contract gets closer, the futures price logically should begin to converge with the cash price so that, on the date the futures contract expires and delivery is due, the two prices are very close.

Now that is what is supposed to happen. But in some commodity markets like the wheat market, price convergence has broken down. When price convergence breaks down, hedges stop working and no longer protect farmers, grain elevators, grain merchants, food producers, and others against price changes. And we will hear today how these businesses are losing the ability to hedge in the Chicago wheat market and are incurring unanticipated costs from failed hedges and higher margin costs. We will also hear how, in many cases, those businesses have to eat those costs because the fierce competition over food prices won't allow them to increase their prices to cover the extra expense. In other cases, when they do pass on those higher costs, consumers, of course, lose.

Virtually everyone this Subcommittee has contacted agrees that price convergence is critical to successful hedging. When the futures and cash prices don't converge at the time a futures contract expires, hedges don't work. There is no dispute over that. In the prepared statement, which I will put in the record, I provide a detailed explanation of why price convergence is essential to effective hedging. In the interest of time and because there is pretty much a consensus in support of that point, I am not going to repeat that explanation here.

The key issue is what is causing the prices not to converge. While there are many possible contributing factors, including artificially low storage prices or delivery problems, our investigation found substantial and persuasive evidence that the primary reason why prices have not been converging in the Chicago wheat market is the large number of wheat contracts being purchased by derivative dealers making commodity index trades.

Those derivative dealers have been selling billions of dollars in commodity index swaps to customers speculating on commodity prices. By purchasing futures contracts to offset their financial

risk, derivative dealers created an additional demand for wheat futures that is unconnected to the cash market, and that has contributed to the gap between the two prices. We know of no other significant change in the wheat market over the past 5 years which explains the failure to converge other than the huge surge of wheat futures bought by derivative dealers offsetting the sale of commodity index swaps to their clients. I emphasize the word “significant.” We know of no other significant change in the wheat market over the past 5 years.

The massive commodity index trading affecting the wheat futures market in recent years was made possible in part by regulators. Existing law requires the CFTC to set limits on the number of futures contracts that any one trader can hold at any one time to prevent excessive speculation and other trading abuses. Those position limits are supposed to apply to all traders, unless granted an exemption or a waiver by the CFTC.

With respect to wheat, the CFTC has established a limit that prohibits any trader from holding more than 6,500 futures contracts at any one time. But over the years, the CFTC has also allowed some derivative dealers to exceed that limit. The CFTC granted exemptions to four derivative dealers that sell commodity index swaps, allowing them to hold up to 10,000, 17,500, 26,000, and even 53,000 wheat futures at a time. The CFTC also issued two “no-action” letters allowing the manager of one commodity index exchange-traded fund to hold up to 11,000 wheat futures and another fund manager to hold up to 13,000 wheat futures. Together, those exemptions and waivers by the CFTC permit six derivative dealers to hold a total of up to 130,000 wheat futures contracts at any one time, instead of 39,000, or two-thirds less, if the standard limit had applied.

Part of the reason that the CFTC granted these exemptions and waivers was because it got mixed signals from Congress. In the Commodities Exchange Act, Congress told the CFTC to set position limits to prevent excessive speculation, and it authorized the CFTC to grant exemptions only for commercial users needing to hedge transactions involving physical commodities in the cash market. But in 1987, two key congressional committees also told the CFTC to consider granting exemptions to financial firms seeking to offset purely financial risks. It was in response to this direction that the CFTC eventually allowed the derivative dealers selling commodity index instruments to exceed the standard limits.

These exemptions and waivers have enabled derivative dealers to place many more speculative bets for their customers than they could have otherwise, resulting in an increased demand for wheat futures contracts to offset the financial risk, higher wheat futures prices unconnected to cash prices, failed hedges, and higher margin costs.

That is why our report recommends that the CFTC reinstate the standard 6,500 limit on wheat contracts for derivative dealers. Imposing this limit again would reduce commodity index trading in the wheat market and take some of the pressure off wheat futures prices. If wheat futures prices remain higher than cash prices after the existing exemptions and waivers are phased out, our report recommends tightening the limit further, perhaps to 5,000 wheat con-

tracts per derivative dealer, which is the limit that existed up until 2006.

Our report also recommends that the CFTC examine other commodity markets to see if commodity index trading has resulted in excessive speculation and undue price changes. This Subcommittee has said before that excessive speculation is playing a damaging role in other commodity markets, especially the crude oil market where oil prices go up despite low demand and ample supplies. And I might add here that our full Committee has done some significant investigations and hearings on the same subject under the leadership of Chairman Lieberman and Ranking Member Collins.

The CFTC has promised a top-to-bottom review of the exemptions and waivers it has granted to derivative dealers and has signaled its willingness to use position limits to clamp down on excessive speculation in all commodity markets, to ensure that commodity prices reflect supply and demand rather than speculators gambling on market prices to turn a quick profit. That review is badly needed, and we appreciate the agency's responsiveness to the turmoil in the markets.

[The prepared statement of Senator Levin follows:]

#### PREPARED OPENING STATEMENT OF SENATOR LEVIN

For more than five years now, this Subcommittee has been taking a hard look at how our commodity markets function. In particular, we have examined how excessive speculation in those markets has distorted prices, overwhelmed normal supply and demand factors, and can push up prices at the expense of consumers and American business.

In 2006, for example, the Subcommittee released a report which found that billions of dollars in commodity index trading on the crude oil market had pushed up futures prices in 2006, caused a corresponding increase in cash prices, and were responsible for an estimated \$20 out of the then \$70 cost for a barrel of oil. A 2007 report showed how a single hedge fund named Amaranth made huge trades on the natural gas market, pushed up futures prices, and increased natural gas prices for consumers and American business.

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The next chart, Exhibit 3, shows the same pattern when the Chicago wheat futures contracts expired. Wheat futures contracts are available in only five months of the year, March, May, July, September, and December. This chart looks at the expiration date for each of those five contracts from 2005 to 2008, and shows the gap between the final futures price and the cash price on that date. The data shows that this gap, or basis, grew from 13 cents per bushel in 2005, to 34 cents in 2006, to 60 cents in 2007, to \$1.53 in 2008, a more than ten-fold increase in four years, providing clear evidence of a dysfunctional market. And again, this increasing price gap took place at the same time commodity index traders were increasing their holdings to nearly half of the wheat futures contracts on the Chicago Exchange.

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Virtually everyone this Subcommittee has contacted agrees that price convergence is critical to hedging. When the futures and cash prices don't converge at the time a futures contract expires, hedges don't work. Let me explain in more detail why price convergence is critical to the ability of farmers, elevators, and others to use the futures markets to manage their price risks. Let's use the example of a county grain elevator that buys wheat from a local farmer, stores it, and sells the grain to a major bakery later in the year.

When the grain elevator buys the wheat and stores it, the value of that grain will fluctuate as grain prices change over time. If grain prices go up, the wheat is worth more. If prices go down, the wheat is worth less and could even drop below what the elevator paid for it. To protect itself, the elevator typically turns to the futures market to hedge its price risk.

This chart, Exhibit 4, shows how the elevator uses the futures market to protect itself from a drop in wheat prices. The example assumes the grain elevator bought wheat on July 15 for \$4 per bushel and wants to sell it to a bakery in December. In July, when the elevator buys the wheat, it checks the futures prices and finds that the price for delivering wheat in December is \$6 per bushel. Since that price is \$2 more than what it paid for the wheat, the elevator wants to lock in that gain. So in July, the elevator obtains a futures contract to deliver a standard amount of wheat to a specified storage warehouse in December at \$6 per bushel.

The grain elevator is now said to be "hedged," because it has grain in storage—which is called being "long" in the cash market—and a futures contract to deliver wheat at a specified price in the future—which is called being "short" in the futures market. In a properly functioning futures market, any loss in the cash value of the stored wheat from July to December should be offset by a gain in the value of its futures contract over the same period.

Here's how it works. When December arrives, the elevator acts to "unwind" its hedge so that it doesn't have to actually incur the expense of delivering its wheat as the futures contract specifies—to a faraway warehouse—and can instead deliver it to its customer, the bakery. To offset its obligation to deliver wheat in December, the elevator goes onto the futures market in December and buys a futures contract obligating it to take delivery of the same amount of wheat during that same month of December. The contract to buy wheat in December can then be used to offset the \$6 per bushel contract to sell wheat in December, and the two futures cancel out. The elevator is then free to sell its stored wheat to the bakery at the prevailing cash price.

The key to a successful hedge here is whether the December cash and the December futures prices have converged. The example on the chart assumes that both the cash and futures prices have converged in December to \$3 per bushel. That means the elevator, in December, can buy a December futures contract to take delivery of wheat at \$3 per bushel, offset it against its contract promising to sell wheat in December for \$6 per bushel, and realize a net gain of \$3 in the futures market. In the cash market, the elevator can sell its grain to the bakery at the prevailing cash price of \$3 per bushel, which is a \$1 per bushel loss compared to the \$4 it paid to buy the wheat. But that \$1 loss in the cash market, when subtracted from the \$3 gain in the futures market, results in an overall gain of \$2 per bushel—exactly what the elevator sought when it initiated the hedge in July.

The December price convergence was critical to the success of the elevator's hedging strategy. It is only because the December wheat futures price and the December wheat cash price were the same that the grain elevator was able to offset its December futures and December cash transactions, and realize the \$2 gain promised by its hedge in July.

The next chart, Exhibit 5, shows what happens when the cash and futures prices don't converge. This chart uses the same assumptions—that, in July, the grain ele-

vator purchased wheat from a farmer for \$4 per bushel and obtained a futures contract promising to sell the wheat for \$6 per bushel in December. In this example, however, the futures price stays higher than the cash price throughout the life of the hedge. When the futures contract expires in December, the December futures price is \$5 per bushel, while the December cash price is \$3. That means when the elevator buys a futures contract in December to offset its earlier hedge, it will have to buy a futures contract at \$5 per bushel, which when offset against its futures contract to sell the wheat for \$6 per bushel, results in a net gain in the futures market of only \$1 per bushel. In the cash market, the elevator still sells the wheat that it bought at \$4 per bushel to the bakery for \$3, resulting in a loss of \$1 per bushel. Subtracting the \$1 loss in the cash market from the \$1 gain in the futures market leaves the elevator without any net gain to pay its expenses.

If the elevator hadn't bought a futures contract in December to unwind its hedge that way, it could have lost out even more, by having to pay the costs of transporting its wheat to an approved warehouse in December. The point of the hedge made in July was not to deliver wheat to a warehouse in December, but to lock in a gain and protect it from price changes. The effectiveness of that hedge requires price convergence, however, and that's exactly what has been lacking on too many occasions in the Chicago wheat market in recent years.

The key issue is what is causing the prices not to converge. While there are many possible contributing factors, including artificially low storage costs or delivery problems, our investigation found substantial and persuasive evidence that the primary reason why prices have not been converging in the Chicago wheat market is the large number of wheat contracts being purchased by derivative dealers making commodity index trades. Those derivative dealers have been selling billions of dollars in commodity index swaps to customers speculating on commodity prices. By purchasing futures contracts to offset their financial risk, derivative dealers created an additional demand for wheat futures that is unconnected to the cash market, and that has contributed to the gap between the two prices. We know of no other significant change in the wheat market over the past five years which explains the failure to converge other than the huge surge of wheat futures bought by derivative dealers offsetting the sale of commodity index swaps to their clients.

The massive commodity index trading affecting the wheat futures market in recent years was made possible in part by regulators. Existing law requires the CFTC to set limits on the number of futures contracts that any one trader can hold at any one time to prevent excessive speculation and other trading abuses. Those position limits are supposed to apply to all traders, unless granted an exemption or waiver by the CFTC.

With respect to wheat, the CFTC has established a limit that prohibits any trader from holding more than 6,500 futures contracts at any one time. But over the years, the CFTC has also allowed some derivative dealers to exceed that limit. The CFTC granted exemptions to four derivative dealers that sell commodity index swaps, allowing them to hold up to 10,000, 17,500, 26,000, and even 53,000 wheat futures at a time. The CFTC also issued two "no-action" letters allowing the manager of one commodity index exchange traded fund to hold up to 11,000 wheat futures and another fund manager to hold up to 13,000 wheat futures. Together, these exemptions and waivers permit six derivative dealers to hold a total of up to 130,000 wheat futures contracts at any one time, instead of 39,000, or two-thirds less, if the standard limit had applied.

Part of the reason that the CFTC granted these exemptions and waivers was because it got mixed signals from Congress. In the Commodities Exchange Act, Congress told the CFTC to set position limits to prevent excessive speculation, and authorized the CFTC to grant exemptions only for commercial users needing to hedge transactions involving physical commodities in the cash market. But in 1987, two key Congressional Committees also told the CFTC to consider granting exemptions to financial firms seeking to offset purely financial risks. It was in response to this direction that the CFTC eventually allowed the derivative dealers selling commodity index instruments to exceed the standard limits.

These exemptions and waivers have enabled derivative dealers to place many more speculative bets for their customers than they could have otherwise, resulting in an increased demand for wheat futures contracts to offset the financial risk, higher wheat futures prices unconnected to cash prices, failed hedges, and higher margin costs.

That's why our report recommends that the CFTC reinstate the standard 6,500 limit on wheat contracts for derivative dealers. Imposing this limit would reduce commodity index trading in the wheat market and take some of the pressure off wheat futures prices. If wheat futures prices remain higher than cash prices after the existing exemptions and waivers are phased out, our report recommends tight-

ening the limit further, perhaps to 5,000 wheat contracts per derivative dealer, which is the limit that existed up until 2006.

Our report also recommends that the CFTC examine other commodity markets to see if commodity index trading has resulted in excessive speculation and undue price changes. This Subcommittee has said before that excessive speculation is playing a damaging role in other commodity markets, especially the crude oil market where oil prices go up despite low demand and ample supplies.

The CFTC has promised a top-to-bottom review of the exemptions and waivers it has granted to derivative dealers, and signaled its willingness to use position limits to clamp down on excessive speculation in all commodity markets, to ensure commodity prices reflect supply and demand rather than speculators gambling on market prices to turn a quick profit. That review is sorely needed, and we appreciate the agency's responsiveness to the turmoil in the markets.

I am grateful to my Ranking Member, Senator Coburn, and his staff for their participation in and support of this bipartisan investigation, and I would like to turn to him now for his opening statement.

Senator LEVIN. I am very grateful to my Ranking Member, Senator Coburn, and his staff for their participation in and their support of this bipartisan investigation, and I turn to him now for his opening statement. Dr. Coburn.

#### **OPENING STATEMENT OF SENATOR COBURN**

Senator COBURN. Senator Levin, thank you very much and let me, first of all, tell you what a pleasure it is to get to work with you and to tell you how highly I think of your staff on this Subcommittee. They have been very helpful, and I have learned a great deal. This is the second hearing that I have been with Senator Levin on.

Let me thank you for having the hearing. The people of Oklahoma, I think, are uniquely invested in the commodities market, not just the wheat but the oil and natural gas, and the subject is appropriate for them.

As most people know, Oklahoma is the delivery point of West Texas Intermediate crude, the global benchmark. It is delivered not far from my home, and we also produce a tremendous amount of hard red winter wheat. So coming from a farming State, I have had a particular interest in this, and I am pleased with today's hearing. And I have also heard from hundreds of our constituents, especially in the last year, that got caught in a bind in what happened.

I understand that commodity markets exist to help buyers and sellers price their goods efficiently and to manage risks associated with producing and carrying inventory, with acquiring financing, with unanticipated price changes over time. Seasonally-produced crops such as wheat can be particularly vulnerable to some of these risks.

At the outset, however, I want to be clear. I do not believe we are alleging any wrongdoing on the part of index investors or anyone else. These investments represent individuals making economic choices in a free market, regular Americans seeking slightly better returns for their university endowments, their stock portfolios, or their retirement funds. Index investors are really nothing more than many of us who have gotten somewhat more sophisticated in how we spread our risk and how we invest.

Nor are we alleging that index investors caused high cash commodity prices or that they are somehow responsible for more expensive consumer goods, like cereal, crackers, and bread. Our investigation did not show that. Our investigation did, however, re-

veal that an abundance of long open interest helped to inflate futures prices and thereby disconnect future prices from cash prices, impairing farmers' and elevator operators' ability to hedge price risk. Because, in the absence of convergence, elevator operators are often forced to liquidate their stock at a cash price well below the futures price at which they had established their hedges. This results in expensive and unnecessary losses and drives market participants not to use the futures market at all, and that is hardly a desirable result for us.

Very few industry participants disagree that index fund participation contributed to the problems in the Chicago wheat market. For most, however, the focus of their criticism was not the index investors but the CME contract, which they believe created persistent structural problems in a market that the large index influx merely exacerbated.

So what is the best solution? Frankly, I agree with Mr. Coyle, with the National Grain and Feed Association, that a free-market solution is most desirable, and I too prefer to see the wheat contract come back into balance with minimal intervention by the Federal Government. Is that possible?

On the one hand, it has not yet done so, but, on the other hand, we have seen some recent changes to the CME contract that I hope will be sufficient. I applaud the CME for their recently-implemented contract changes; noting that just this month it amended its wheat contract, chiefly to provide for additional delivery locations and to increase the storage rate for wheat.

Last, a word of caution. Like a lot of "solutions" to complex problems that Congress oftentimes gets involved in, including those offered here today—like compelled load-out, additional delivery points, higher storage fees, and even our own report's recommendation—carry the risk of unintended consequences. While there is little doubt that scaling back index participation will work to improve convergence, investor capital does not stand idle for long, and interest will flow into other products and other markets, perhaps overseas.

The world is flat when it comes to world economic and financial considerations, and global competition for capital has become more fierce than ever before. The United States is losing this competition to countries like Singapore, Luxembourg, Hong Kong, and especially the U.K. Nations such as these are making smarter tax and regulatory policies, and these decisions are paying great dividends in the form of increased jobs and investments for their citizens. These countries understand that financial activity, especially those relating to derivatives and money management, crosses international borders with the greatest of ease, and they have rolled out the welcome mat for them.

So our challenge is to, as unintrusively as possible, help to restore the balance to the Chicago market and help to ensure a well-functioning marketplace, one with a helpful balance of liquidity, volatility, and risk, and one that does not necessarily harm economic activity.

I thank the witnesses who are here today for their testimony and the time that they spent preparing that, and I would note, Mr.

Chairman, at 4 to 4:30 p.m., I will have to be gone, but I will return.

#### PREPARED OPENING STATEMENT OF SENATOR COBURN

Mr. Chairman, I want to thank you for calling this important hearing. The people of Oklahoma are, I think, uniquely invested in the commodities markets and are interested in the subject at hand. Oklahoma is the delivery point of West Texas Intermediate crude oil, the global benchmark. It's delivered in Cushing, Oklahoma, not far from my home town of Muskogee. My state also produces a tremendous amount of "hard red winter wheat." So, coming from a farming state, I have had a particular interest in this investigation and am pleased with today's hearing.

Commodity markets exist to help buyers and sellers price their goods efficiently and to manage risks—risks associated with producing and carrying inventory, with acquiring financing, with unanticipated price changes over time. Seasonally produced crops—such as wheat—can be particularly vulnerable to some of these risks. I know—I have a lot of friends back home who are farmers, merchants, and elevator operators, and I can tell you they're hurting. As if soaring energy and fertilizer costs last year weren't enough, folks also had to deal with volatile wheat prices at home, an evaporation of credit (if not outright insolvency) at their bank, and a stronger dollar that made their product less competitive abroad—where much of the Oklahoma wheat crop ends up. All of this on top of a persistent, years-long nonconvergence problem in the Chicago wheat market.

At the outset, however, I want to be clear: we are not alleging any wrongdoing on the part of index investors or anyone else; these investments represent individuals making economic choices in a free market, regular Americans seeking slightly better returns for their university endowments, stock portfolios, and retirement funds. Index investors are really nothing more than teachers, firefighters, policemen and average hardworking people. Nor are we alleging that index investors caused high cash commodity prices or that they are somehow responsible for more expensive consumer goods like cereal, crackers, and bread. Our investigation did not support such conclusions.

Our investigation did, however, reveal that an abundance of long open interest helped to inflate futures prices and thereby disconnect futures from cash prices, impairing farmers' and elevator operators' ability to hedge price risk. Because, in the absence of convergence, elevator operators are often forced to liquidate their stocks at a cash price well below the futures price at which they had established their hedges. This results in expensive and unnecessary losses and drives market participants not to use the futures market at all, hardly a desirable result.

Very few industry participants disagreed that index fund participation contributed to the problems in the Chicago wheat market. For most, the focus of their criticism was not the index investors, but the CME contract, which they believe created persistent structural problems in a market that the large index influx merely exacerbated.

So what is the best solution? Frankly, I agree with Mr. Coyle, with the National Grain and Feed Association, that a free market solution is most desirable, and I, too, "prefer to see the wheat contract come back into balance with minimal intervention" from the federal government. The question is: is this possible? On the one hand it has not yet done so, but on the other we have seen some recent changes to the CME contract that I hope will do the trick. I applaud the CME for their recently-implemented contract changes. Just this month, it amended its wheat contract, chiefly to provide for additional delivery locations and to increase the storage rate for wheat.

Lastly, a word of caution: like a lot of "solutions" to complex problems, those offered here today—compelled load-out, additional delivery points, higher storage fees and even our own report's recommendation—carry the risk of unintended consequences. While there is little doubt that scaling back index participation will work to improve convergence, investor capital does not stand idle for long, and interest will flow into other products and other markets, perhaps overseas. The world is "flat," and global competition for capital has become more fierce than ever before. The United States is losing this competition to countries like Singapore, Luxembourg, Hong Kong, and especially the U.K. Nations such as these are making smarter tax and regulatory policies, and these decisions are paying great dividends in the form of increased jobs and investment. These countries understand that financial activity—especially those relating to derivatives and money management—crosses international borders with the greatest of ease, and they have rolled out the welcome mat.

So our challenge is to, as unintrusively as possible, help to restore balance to the Chicago market and help to ensure a well-functioning marketplace, one with a helpful balance of liquidity, volatility, and risk, and one that does not unnecessarily harm economic activity.

I thank the witnesses for their presence here today and look forward to hearing their testimony.

Senator LEVIN. Thank you so much, Dr. Coburn.

Let me now call our first witness for this afternoon's hearing: Gary Gensler, the new Chairman of the Commodity Futures Trading Commission, your first appearance before the Subcommittee. We welcome you.

Pursuant to Rule VI, all witnesses who testify before this Subcommittee are required to be sworn, so I would ask you to please stand and raise your right hand. Do you swear that the testimony you are about to give this Subcommittee will be the truth, the whole truth, and nothing but the truth, so help you, God?

Mr. GENSLER. I do.

Senator LEVIN. Oh, I am sorry. Senator Collins, apparently had an opening statement, and in that case, I will interrupt Dr. Gensler's testimony and call on you, Senator Collins.

#### **OPENING STATEMENT OF SENATOR COLLINS**

Senator COLLINS. Thank you, Mr. Chairman. I will not delay the testimony long, but I do appreciate the opportunity to make just a few comments.

First of all, Mr. Chairman, let me thank you and recognize you for your many years of leadership in exposing excessive speculation, market abuses, and manipulation. As you kindly mentioned, last year Chairman Lieberman and I held a series of hearings investigating the skyrocketing price of energy and agricultural commodities. Our hearings gathered compelling evidence that excessive speculation in futures markets was a significant factor in pushing up oil and agricultural commodity prices.

Chairman Levin and the Ranking Member, Senator Coburn, have undertaken an in-depth and exhaustive investigation of speculation by delving into the inner workings of the wheat market. I believe that the data and analysis that they have presented make another compelling case that excessive speculation has caused our commodity markets to become unmoored from those who actually make a living using the underlying commodities, as well as by the consumers who pay the ultimate price.

I want to just share with the Subcommittee, quickly, an example that we talked about last spring. It involved a bakery owner from Maine, Andrew Siegel, who testified before us. He experienced a truly astonishing increase in the price of the 50,000 pounds of flour that he uses each week. In September 2007, he was paying \$7,600 per week for 50,000 pounds of flour. By February 2008, he was paying \$28,000 a week for the same amount of flour. That obviously jeopardized his ability to continue in business, and he identified Federal ethanol policies as well as excessive speculation as the major culprit.

So my point is that the working of these markets have real-life consequences. They affect not only the pension funds and university endowments and other institutional investors who are simply trying to get a better return and seek diversification of their assets,

but they also affect the small baker; they affect the elderly widow who is heating her home with heating oil; they affect the farmers; they affect the purchasers of agricultural and oil commodities.

So to try to combat the effect that speculation has had in our commodity markets, I have introduced the Commodity Speculation Reform Act. This bill would limit the percentage of total contract holdings that non-commercial investors could maintain in any one commodity market, and the bill would also close the swaps loophole that currently allows financial institutions to evade position limits intended to prevent an investor from cornering a market.

I do want to say that we have made progress in one area that our Subcommittee has focused on, and that is the lack of staff and other resources for the Commodity Futures Trading Commission. Along with Senator Durbin, I serve on the Subcommittee on Appropriations that has jurisdiction, and I am pleased to report to the Members of this Subcommittee that we have provided a 21-percent increase in the budget for the Commodity Futures Trading Commission. And I think this is going to help the CFTC to more effectively monitor markets, analyze the vast amount of complex trading data, and more quickly respond to problems in the operations of the futures markets.

I personally believe that while I commend the Commission for looking at regulatory reforms, we also need to legislate in this area, and I know the Chairman has been a real leader as well in pursuing legislative reforms over the last few years.

So I am very pleased to be here with you today, and thank you so much for allowing me to make some comments.

#### PREPARED OPENING STATEMENT OF SENATOR COLLINS

Mr. Chairman, thank you for your many years of leadership in exposing excessive speculation, market abuses and manipulation. Last year, Chairman Lieberman and I held a series of hearings investigating the skyrocketing price of energy and agricultural commodities. Our hearings gathered compelling evidence that excessive speculation in futures markets was a significant factor pushing up oil and agricultural commodity prices.

Chairman Levin and Ranking Member Coburn have undertaken an in-depth and exhaustive investigation of speculation by delving into the inner workings of the wheat market. The data and analysis they have presented make another compelling case that excessive speculation has caused our commodity markets to become unmoored from those who actually make their livelihoods using the underlying commodities, as well as consumers who pay the ultimate price.

Last spring, Andrew Siegel, the owner of a bakery in Maine, testified before the full Committee that the dramatic increase in the price of the 50,000 lbs. of flour that he used per week from September 2007 to February 2008 made it nearly impossible to operate his small business. He identified federal ethanol policies and excessive speculation as the major culprits.

Our hearings demonstrated that massive new holdings of commodity futures by pension funds, university endowments, and other institutional investors appeared to be driving up prices. These investors' intentions may be simply to provide good returns and investment diversification, but many experts believe the size of their holdings are distorting commodity markets and pushing prices upward.

To combat the effect that speculation has in our oil and agricultural commodity markets, I have introduced the Commodity Speculation Reform Act. This bill would limit the percentage of total contract holdings that non-commercial investors could maintain in any one commodity market and close the "swaps loophole" that currently allows financial institutions to evade position limits intended to prevent an investor from cornering a market.

Although commodity market reforms must still be made, Congress has made important progress addressing another problem our hearings identified: inadequate funding for the Commodity Futures Trading Commission (CFTC). The CFTC is re-



sponsible for ensuring that the commodities markets provide an effective mechanism for price discovery and a means of offsetting price risks. But CFTC's workload has grown rapidly over the past decade as trading volume increased more than ten-fold, reaching well over 3.4 billion trades in 2008. Actively traded contracts have grown by a factor of five—up from 286 in 1998 to 1,521 in 2008.

As the Ranking Member of the Appropriations Subcommittee for Financial Services, I joined with Chairman Durbin to increase funding for the CFTC to \$177 million—an increase of 10 percent over the President's fiscal year 2010 request. This funding would provide CFTC with 21 percent more resources than last fiscal year. This additional investment will enable the CFTC to more effectively monitor the futures markets, analyze a vast amount of complex trading data, and more quickly respond to problems in the operations of the futures markets.

I thank the Chairman and Ranking Member for their work in this area. It will help make the case for needed reforms.

Senator LEVIN. Thank you so much, Senator Collins. Senator Tester.

#### **OPENING STATEMENT OF SENATOR TESTER**

Senator TESTER. Chairman Levin and Ranking Member Coburn, thank you very much for having this hearing. This hearing is liable to be a lot of fun for me. I should explain. I am a farmer, an actively engaged farmer. Last Sunday I got the combine ready to go so this weekend we can start harvesting wheat, hard red wheat.

For years, the neighborhood has been talking about the fact that the Chicago Board of Trade has been playing poker with our livelihood. So it is an issue that is very important because, as Mr. Wands says in his statement, grain is not an asset class, but—and I paraphrase—food. So it impacts consumers, it impacts family farmers and farmers of all type; it impacts the middlemen, too.

I guess I would just say—and if you can answer this in your opening statement, I will not have to ask: Does supply and demand exist in a cash market? Or has the futures market distorted that supply and demand?

What is the overall impact on the cash market of futures trading, if any?

So, with that, I will save my questions until the end. Thank you, Mr. Chairman.

Senator LEVIN. Thank you, Senator Tester. Senator Bennet.

#### **OPENING STATEMENT OF SENATOR BENNET**

Senator BENNET. Thank you, Mr. Chairman. I would like to thank you and the Ranking Member for your leadership on this, and thank the staff as well for excellent work. The written materials for this hearing were among the most fascinating I have read in a long time.

This issue is very important to my State. Farming is risky business. It is a notoriously thin margin the people in the food industry have, and it is not a business in which people enrich themselves or pay themselves large bonuses.

I expect to hear a lot today about the value index traders have added to commodity markets by increasing liquidity and shifting risk off of farmers, processors, and end users. And while this is often true, in practice the written testimony that we read from traditional market users strongly suggests to me that it is harder to hedge risk today than it was 10 years ago. And that is what has

my attention about the kinds of distortions that Chairman Levin talked about.

So, Mr. Chairman, thank you for allowing me to make an opening statement, and thank you for holding this hearing.

Senator LEVIN. Thank you so much, Senator Bennet. We appreciate both of those opening statements, and I am sorry I did not call on my colleagues for them. I sometimes get confused as to whether I am in the Armed Services Committee where our general practice is not to or our Subcommittee here where our general practice is to. So forgive me for that oversight.

Now, Mr. Gensler, please.

**TESTIMONY OF HON. GARY GENSLER,<sup>1</sup> CHAIRMAN,  
COMMODITY FUTURES TRADING COMMISSION**

Mr. GENSLER. Thank you, Chairman Levin, Ranking Member Coburn, Members of the Subcommittee. Thank you for letting me testify here today. I hope my written testimony can go into the record, and I will try to summarize as best I can and answer some of the questions.

Senator LEVIN. All of the written testimony will be made part of the record. We will operate under a 10-minute rule here today, so try to summarize the best you can. When 10 minutes comes, I think you will be given a light, if that light system is working. Thank you.

Mr. GENSLER. All right. Thank you.

The Subcommittee's report on excessive speculation in the wheat market is a very important contribution to the whole market's and the CFTC's understanding of the convergence problems in the wheat market. The wheat convergence problem is at the core of the CFTC's mission, that all commodities contracts, but particularly those tied to physical commodities, need to be able to be relied upon by producers, farmers, grain elevator operators, end users, and the bakery owner that the Senator referred to. Also, for hedging and price discovery, we seek fair and orderly markets that have a price discovery function coming together free of manipulation and fraud, but also free of the burdens of excess speculation.

I would like to start this afternoon with a quick review of the lack of convergence, which was so well summarized in your report, but also talk about at least three of the factors that we think are part of this phenomenon; and then, second, talk a little bit about what the CFTC has embarked upon most recently, and some of the hearings that we have coming up on some of these very related topics; and then, last, talk a little bit about some of the recommendations in your report.

In terms of the wheat markets themselves and the wheat convergence, you are absolutely right and your charts were very helpful. There has been a lack of convergence in the market, meaning that the futures price and the cash price are not coming together. And this is at the absolute core of the markets and has been so for well over a century, since corn and wheat started on the Chicago Board in the 19th Century. And it has failed to converge. There is progress based on the difference with the Toledo price. Your chart

<sup>1</sup> The prepared statement of Mr. Gensler appears in the Appendix on page 64.

was Chicago, but I apologize I am using a different reference. The convergence problem got out to over \$1 last year. It is now based upon some of the changes in the contract down to 80 cents in one spot, and some say it is a little bit better than that. But it is not satisfactory for the CFTC. We do not think this is enough progress, and we are going to be monitoring it very closely into the September contract, which is the next contract to come up.

Three factors—I mean, many factors have been talked about in the marketplace, but there are three factors I would like to focus on today that we believe have contribute to this lack of convergence: one, the design of the contract itself; two, the influx, as you put it, of financial investors and index investors in the market; and, three, what I will call “large carry,” but I will talk about when this marketplace is at “fully carry.” That means basically that the prices of the out or deferred futures contracts are higher than the earlier months.

In terms of the design of the wheat contract itself, much has been addressed by your report and by the CME to try to free up more delivery capacity. If a contract in the futures market is structured in such a way that the cash market and the futures market can come together, then it is more likely to converge. Senator Coburn talked about West Texas intermediate. That contract has converged, and it has a different contract design than this contract.

The recent changes by the CBOT in this regard to try to address the contract effectively is trying to say there is more places that the wheat can be delivered. They have more than doubled that to try to say that there are more places wheat can be delivered into the contract to bring convergence. But as we have noted, it has not happened yet.

A second factor in the marketplace is what I will call full carry or large carry, and it seems that there are more problems in convergence when we get to full carry. What does this mean? It means that the earlier contracts—there are five contracts in a year, as the Chairman mentioned. But the earlier contracts are priced lower than the later-dated contracts. And if it is attractive to a financial investor to hold that later-dated contract because they can get more than their cost of money at the bank, their cost to carry, and more than the storage cost, then they are more inclined to keep that contract out. At least the statistics that we look at indicate that the convergence problem is higher during these full carry periods than otherwise.

If you look over the last 20 or 30 years, the wheat market usually is not at full carry, meaning it usually is not attractive to pay the bank, pay the storage, pay the insurance, and keep it. We have been in a period of full carry. Is this a symptom or a cause? Is it a symptom, something that is occurring because of other factors, possibly the index investors? Or is it a cause? But it is certainly related to this.

And then, third, I wanted to mention the relative size of this market. The Chicago contract is really a very small market, about \$1.5 billion a year annual production, real farmers producing wheat. It is about \$1.5 billion. It is only 2 percent of the global production in wheat. However, this is a global contract that many investors are looking at and are looking to try to get exposure, to use

a financial word, “exposure” to this asset class. But it is real wheat. It is real farmers. It is only \$1.5 billion of production.

So the influx of index investors over this period of time has effectively taken about half of the long position. About half of the contracts are owned by effectively index investors. That is equivalent to about 3 years of annual production. So, on the shoulders of a very hearty Midwestern crop is placed the whole global financial markets trying to get exposure to wheat. And in all of the other markets that we follow—corn, soybean, crude oil, natural gas—this is the highest ratio with regard to the market. A little over half of the market is long index investing, and the ratio to the underlying annual production being over 3:1 gives you a sense of the magnitude that this small crop is sort of shouldering. I think all these factors relate to this lack of convergence.

Now, with regard to the recent changes, as I said, these recent changes look directionally in the contract to be positive. We have an agriculture committee that advises us. We are looking at it very closely. We are going to keep a close eye on what happens in the September contract. But as I said, we at the CFTC are not satisfied with where this is.

There are a number of other recommendations in the marketplace. Some were mentioned. Forced closeout, meaning that the grain that is in a delivery elevator or on a delivery point has to be actually delivered out to a future contract, is one alternative. Another alternative of moving the delivery points down the Mississippi closer to where the export market is. A third, which is used in Minneapolis, is called “cash settlement.” All three of these and others we think need to be considered and further looked at.

We also believe broadly, more broadly to this circumstance, that we at the Commission should take a close look at all position limits for commodities of finite supply and look at the hedge exemptions that have been issued, really starting back in 1991. We publicly announced we are having hearings. We are having our first hearing next Tuesday, and then Wednesday, and then we have a third hearing the following week—where we have asked for a broad array of experts, probably from both sides of this debate, to come in and really talk to us about if we set position limits in the agricultural commodities, ought we not also set them for energy commodities? If we set them, shouldn’t we really mean them? And how should we look at this bona fide hedging exemption, which initially, as Congress laid out and the Chairman noted, was for commercial hedgers, but after 1991 was widened out for other hedgers?

We are looking forward to hearing from a broad array of witnesses, but we think that our statute clearly says that we shall set position limits to protect against the burdens that may come to markets from excess speculation. I look forward in our question-and-answer period to get further into that.

We also think we need to work with Congress and work aggressively with Congress to bring the whole over-the-counter derivatives marketplace under regulation; that if we only do this in the futures market, money can travel to other markets. So not only do we need to bring over-the-counter derivatives under regulation to better protect the American public and enhance transparency, but

we also need to bring aggregate position limits to the whole market structure.

Mr. Chairman and this Subcommittee, in terms of the recommendations in your report, we are looking very closely at all the recommendations. As it relates to the hedge exemptions in the agricultural space, whether they be for the swap dealers or the no-action letters that you referred to, we are looking at those very closely. As I mentioned, the hearings next week are going to be very important to us as a Commission. But the individual exemptions and, particularly the no-action letter exemptions, say on their face that they were not consistent with the original intent of what a bona fide hedger is. I mean, they are financial investors, not directly commercial hedgers. We certainly would look forward to working with this Subcommittee about all of the recommendations, but the key recommendations on the hedge exemptions and no-action letters we are looking at very closely and will be taking up next week in our hearing.

I think with that I am out of time and out of testimony.

Senator LEVIN. Thank you so much, Mr. Gensler.

We will have maybe 10 minutes for each of our questions on the first round.

In your written testimony, you said the following: "The continued lack of convergence in important segments of the wheat . . ."—this is page 1, third paragraph. "The continued lack of convergence in important segments of the wheat market has significantly diminished the usefulness of the wheat futures market for commercial hedgers. The reduced ability of these firms to hedge their price risks increases the cost of doing business. Ultimately, it is the American consumer who will bear the burden of these increased costs."

Am I reading your testimony accurately?

Mr. GENSLER. Yes, I believe that convergence is at the core of our mission for a good reason. It is because we have to have convergence so that producers and grain elevator operators, millers, purchasers, and bakeries can hedge their risk, and then the American public benefits by that.

Senator LEVIN. All right. And that the inability to hedge price risks increases the cost of doing business, and ultimately it is the American consumer who bears that burden?

Mr. GENSLER. Yes.

Senator LEVIN. You have also in your written testimony said that, "Hedging in the futures markets only works to the extent that the price of the commodity in the cash market and the price of the commodity in the futures market converge as a futures contract expires."

I just want to make that a clear statement, and I want to just make sure you stand by that statement.

Mr. GENSLER. I stand by it. It is my written testimony.

Senator LEVIN. All right. I want to put some focus on that written testimony.

Now, will the CFTC, as part of its review, look at the question of whether or not commodity index trading constitutes excessive speculation in the aggregate so that position limits should be restored for derivative dealers?

Mr. GENSLER. The Commodity Futures Trading Commission is going to look at position limits across all classes of speculators. Our statute is set up in such a way that under the provisions, we are supposed to look at this and only exempt bona fide hedgers. So we will be looking at it not only for index investors and exchange-traded funds and exchange-traded notes, but also for swap dealers and across the broader class of speculators in financial markets.

Senator LEVIN. Now, our Exhibit 3<sup>1</sup> and your reference to Toledo both show that the gap between futures and cash prices—in other words, the basis—has grown dramatically in the last 5 years—on our chart from 13 cents to \$1.53. In your testimony, referring to the Toledo situation, the gap has gone during the same period from 5 cents to \$1.07. Is that correct?

Mr. GENSLER. That is correct, sir.

Senator LEVIN. In our case, it is a 13-fold increase in 4 years; with your material from Toledo, it is a 21-fold increase in 4 years. So even though the dollar amount may be somewhat less, \$1.02, compared to the Chicago futures prices and cash prices in our report, which is \$1.53, the percentage increase is actually greater in Toledo than it is in Chicago.

Mr. GENSLER. Both point to the same problem.

Senator LEVIN. All right. And that is the problem that we want to focus on and are glad that you are focusing on. Our report concludes that the increase in the number of futures contracts from 30,000 contracts in 2004 to 220,000 contracts in 2008 has created this additional demand for futures contracts unconnected to and without parallel in the cash market. Would you agree with that? In other words, there is no increase in the cash market that equals that increase in the futures market?

Mr. GENSLER. That is correct, sir. The annual production and the number of millers and bakers and buyers are generally about the same. That is correct.

Senator LEVIN. Now, are the demands of the derivative dealers for futures a significant cause of the increased number of futures contracts which are out there? We estimate it is about 45, 50 percent now in the futures market that is demand by the index investors. Do you have a percentage? Or do you disagree with our percentage that about half the market is now those index investors?

Mr. GENSLER. We are looking at the same data. About half of the current market—I mean, it fluctuates, but about half of the current futures outstanding right now is in this long index investors or swap dealers who are intermediating for the index investors.

Senator LEVIN. As to the issue of price convergence, a competing theory which has been offered for why there is a lack of price convergence is that the Chicago wheat contract is flawed. It makes delivery too difficult, allows holders of wheat to hang onto wheat too easily, and charges too little for storage.

Isn't it true that for most of the last 5 years, at least, the same wheat contract has been in place?

Mr. GENSLER. It is true. I do think that some of those design problems in the wheat contract make this market far more susceptible to these problems. These problems occur more when we get

<sup>1</sup> See Exhibit No. 3, which appears in the Appendix on page 427.

into a period of what I earlier called "full carry" as well. So if there was a perfectly blue sky out, everything was shiny, maybe you would not see as much of a convergence problem. But there is a problem in the design of the contract and we get into these periods of full carry, we see this far more aggravated.

Senator LEVIN. Do you believe that the dramatic increase in commodity indexed trading and the futures which are purchased to hedge against a risk, has played a significant role in the failure of convergence?

Mr. GENSLER. I think, Mr. Chairman, that it is part of the role. Senator LEVIN. Would you say it is a significant part?

Mr. GENSLER. I would like to stay with, I think, it is a contributing factor to this.

Senator LEVIN. And how much it contributes, are you going to let us know after some study is completed or what?

Mr. GENSLER. Mr. Chairman, I think that we have to work to get the design of the contract better. We are watching that very closely. I also believe that we are going to take and use every authority we have currently, looking at position limits and hedge exemptions. So we are not actually separately studying whether it is a 5-percent contributor or a 75-percent contributor. We do think that in these market environments of full carry and with this contract design, it has been a contributing factor.

Separate from that, we think that our authorities are such, the Congress said in the 1930s that we shall set position limits, and we should go about that job to help protect against the burdens that can come from excess speculation.

Senator LEVIN. And when are you going to be deciding whether to carry out that mandate—in other words, remove the exemptions, remove the waivers? When are you going to be making a decision on whether you will be doing that?

Mr. GENSLER. We are going to do it through this process of the hearings. We have three hearings set for the next 2 weeks, and then based upon those hearings, we have a Commission process. There are four of us now on the Commission, and we will work through that in as expeditious a manner as we can.

Senator LEVIN. Do you expect that decision will be made by the fall?

Mr. GENSLER. I would hope so, but also I recognize I have four commissioners and I have to count votes and work through a very complicated matter. And as you rightly noted, it has been since 1991 that these exemptions have been in place in many instances.

Senator LEVIN. The position limit that you have in effect prohibits traders from holding more than 6,500 contracts at a time, and that is designed to prevent excessive speculation. But the exemptions and the waivers have created some real big loopholes in that.

In response to our questions, CFTC told us that it had granted exemptions to four derivative dealers selling swaps, and it provided no-action letters to two fund managers, which together would allow these six entities to hold up to 130,000 wheat contract instead of the 39,000 which would be allowed if that standard limit of 6,500 contracts at any one time had applied.

Now, in its prepared settlement, the CME tells us that the number of exemptions is really much larger. They have granted exemptions to 17 entities selling commodity index swaps and allowed them to hold up to 413,000 wheat contracts at a time. They have also said in their prepared statement that, prior to being approved by the CME, all index traders were required to receive prior CFTC approval. The CME did not grant any exemptions to index traders that the CFTC had not already granted.

So there seems to be a difference there. Your testimony is that six entities allowed to hold up to 130,000 wheat contracts, but the CME says 17 entities allowed to hold up to 413,000 wheat contracts, and I am wondering why those numbers are so different.

Mr. GENSLER. Mr. Chairman, I believe that the exemptions you referred to that are in the CME testimony refers to 15 parties that have various hedge exemptions dating back sometimes 18 years, and these two no-action letters, approximating 400,000 contracts in aggregate. I believe that is an accurate figure.

In the Subcommittee's report, I believe that it is a slightly narrower question, which was just those granted explicitly for index investing. So I believe the 130,000 in your report, which is just a subset of the total 400,000, but I believe approximately 400,000 is an accurate figure for all hedge exemptions in this category.

Senator LEVIN. All right. Again, I would say that in their prepared statement, prior to being approved by CME, they say all index traders were required to receive prior CFTC approval.

Mr. GENSLER. Well, all hedge exemptions, whether they were explicitly for index trading or for other reasons, for agricultural do get CFTC exemptions, as opposed to crude oil which is done by the exchanges.

Senator LEVIN. Thank you very much. Dr. Coburn.

Senator COBURN. Isn't the real reason that there is no problem with price convergence in Cushing, Oklahoma, is because if you have your name on that barrel of oil, you better be there in Cushing because delivery is going to happen?

Mr. GENSLER. Senator, you are correct that is one of the design features. It is in essence a forced load-out, so to speak.

Senator COBURN. So delivery does have a lot to do with some of this lack of convergence?

Mr. GENSLER. Yes.

Senator COBURN. Explain to me the history of why we went from 5,000 to 6,500 contracts.

Mr. GENSLER. Though I was not at the Commission at the time, the earlier look at this was—setting position limits for agricultural commodities was a concept to ensure that we have at least a minimum number of participants in a market and a diversity of speculators and diversity of points of view. And so the Commission set them so that no one trade could have more than 10 percent of the first part of the market, the first 25,000 contracts, and 2.5 percent of the rest.

I believe that back then it was raised from 5,000 to 6,500 just because the overall market had grown. So it was trying to use percentage limits but adapt it for a larger market.

Senator COBURN. And you testified earlier that this market really had not grown in terms of the actual wheat coming into it over



the last 10 years, essentially, in terms of raw product available for the contracts?

Mr. GENSLER. Yes, I believe the question was the last few years. I do not know about the last 10 years.

Senator COBURN. OK, so the last 5 years. So it would seem to me that if you have the same amount of wheat coming in and now 50 percent of the contract purchases are by people who are not commercial—they are not end users, they are not what we would consider the traditional use of a commodity exchange to hedge or plan, it would seem to me that there is no question that there is a direct relationship of index funds and the long-held positions that would account for some of this non-convergence. Would you agree with that?

Mr. GENSLER. Well, I think they are a contributing factor to it, and as I said, the CFTC I believe earlier was just looking that the overall market for the futures—not the cash but the futures had grown and was trying to keep up with that in moving that from 5,000 to 6,500.

Senator COBURN. So let us talk about corn then. Has the overall number of contracts on corn grown?

Mr. GENSLER. I would probably have to get back to you on the exact dates and times on the corn.

Senator COBURN. But there is no question we are planting a heck of a lot more corn in this country because we, in my opinion, have foolishly said we are going to use it for petroleum. But we do have more corn that is out there and more contracts, right?

Mr. GENSLER. I do not have the exact figures in my head as to the number of contracts—

Senator COBURN. You came prepared for wheat today. I understand.

Mr. GENSLER. I apologize. I can get back to you just on the number—

Senator COBURN. What I am trying to say is there is corn, there is soybeans, and there is wheat. You talked about this \$1.5 billion worth of dollars in wheat. I know there is a whole lot more than that in corn, and we have had a tremendous stimulation to the production of corn. And so why aren't we seeing similar problems with corn? Because I know there is index funds on corn as well.

Mr. GENSLER. Right. Senator, I do believe the corn market and the corn futures market, both cash and futures, are much larger than wheat. And in wheat, we actually have on the Chicago market just 20 percent of U.S. production because we also have Kansas City, which is more related to Oklahoma. We have Minneapolis, which I think is probably more related to your home State; whereas, in corn, it has a very different contract design, much larger market. So index investors are a much smaller percentage of the open futures interest in corn just because the corn cash and futures market are much larger.

Senator COBURN. And there is much less of a problem with convergence in those markets.

Mr. GENSLER. There has been some convergence issues, much smaller in corn or in soybean.

Senator COBURN. Right, OK. How aggressive should Congress be—and this is opinion, and I am not going to hold you to it, but

I would like to have your opinion because you are sitting there as the head of the CFTC. How aggressive should we be in going after this versus letting you under your authority try to fix this problem?

Mr. GENSLER. I think this is a partnership with Congress. I think that there are many things we can do under our current authority, but there are many areas where we need help, as Senator Collins said earlier. We need help with resources, and we thank you very much for that recent vote in the Subcommittee. But we also need a great deal of help in terms of setting aggregate position limits and bringing reform to the over-the-counter derivatives marketplace.

I think within our current authority we can address position limits for futures, both in the agricultural and energy space, and there will be a great deal of debate, and that is why we are having these hearings. I do think our authority is very clear that we can do this in the futures market, but we do need your help to make sure that then money does not flow elsewhere and that we just push it into a opaque or offshore market.

Senator COBURN. Right. That is a concern that I have because I think if we become too restrictive here, the invested capital goes somewhere else.

Senator Levin mentioned the price of oil and speculation on that. Is there any doubt in your mind on the effect of index funds on oil price. And this is for education. I am not trying to score a point. I am just trying to get educated. Do you think that they—when we had \$140 a barrel—

Mr. GENSLER. I think, Senator, that we had a worldwide asset bubble in a lot of classes of assets. We saw it in the housing market, and the American people was hurt by that. But we also had an asset bubble that peaked in June 2008 in many commodity classes, not just wheat and corn but also oil and natural gas. That asset bubble had a lot of reasons, but part of it was financial investors thinking, all right, this is an asset class, just like I invest in stocks or invest in bonds or maybe emerging market stocks; we should move X percent into energy markets.

And so I think it was a contributing factor, but there are many factors in the overall energy market.

Senator COBURN. Do you think the double-down and double-up index funds that are double-hedged have any extra contribution to some of the phenomenon we have seen?

Mr. GENSLER. I am not sure I am familiar with the double—

Senator COBURN. Well, like DXO, for example. That is one on oil, which is a double-up. For every point you get up, you get twice as much. In other words, it is doubly hedged.

Mr. GENSLER. Oh, I see, yes.

Senator COBURN. Do you think those have any impact at all on price swings? Do you think the average investor who is being told to invest in an index fund has any idea about what the risks associated with that are?

Mr. GENSLER. I think the category that you named is just part of the broader phenomenon of asset investment that particularly when there are swings, when there is a swing in mood.

Senator COBURN. Volatility.

Mr. GENSLER [continuing]. That it could bring in. In terms of the average investor—and certainly this is something, I am sure, that the SEC and Chair Schapiro and I will look at, too—I think exchange-traded funds can be a very good product when well understood by an investor in the stock market or even in the bond market. As for exchange-traded funds in the commodity markets, it is still open to me whether investors fully understand the high fees and the transaction costs because every one of these funds has to constantly roll their positions trying to chase to stay even with the underlying assets.

Senator COBURN. A couple of the things that you have described in your testimony, solutions that might be possible—compelled load-out, changing delivery location to the Gulf, adding a new contract which is cash-settled. What are the potential unintended consequences if you were to do that? Have you thought through that? And could you discuss those with me? For example, shifting to the Gulf, what are the unintended consequences in the market if that were to happen?

Mr. GENSLER. Senator, on each one of them, there are pros and cons and would have to actually be decided by the exchange themselves rather than the CFTC. We have included them in my testimony, to highlight there are alternatives. And we have an agriculture committee that advises us on these as well.

Frankly, there are always winners and losers when you move a delivery point because the basis starts to shift between the cash and the futures market. So in that example, you can move down the Gulf, where most of the export market is and so forth. Originally the export market was off the Great Lakes if we go back decades. That is why the delivery points were close to Chicago. But as more of the export market has moved down the Mississippi, that is why some people have recommended that. But there would be some winners and losers.

Senator COBURN. Farmers in Oklahoma during this phenomenon in 2008 wanted to sell their crops and could not because the grain elevators could not because everybody was blocked out. Everybody in agriculture lost. The question is: Who won?

Mr. GENSLER. Not the American consumer.

Senator COBURN. The American consumer did not win, but the American farmer sure as heck did not win either.

Thank you, Mr. Chairman.

Senator LEVIN. Thank you, Dr. Coburn. Senator Tester.

Senator TESTER. Yes, I would like Exhibit 5 put up,<sup>1</sup> and I would assume, Mr. Chairman, is this a real example or is it just a projected example?

Senator LEVIN. Projected.

Senator TESTER. It is a projected example.

Senator LEVIN. Yes.

Senator TESTER. OK. Kind of following on what Senator Coburn had to say, because the previous chart had a triangle where they converged. They both went down to \$3. The futures fell quicker than the cash price did. Who loses when there is no convergence?

<sup>1</sup> See Exhibit No. 5, which appears in the Appendix on page 429.

Mr. GENSLER. I think a lot of people lose when there is not convergence.

Senator TESTER. Is it the farmer that loses? Is it the investor that loses? Who loses?

Mr. GENSLER. The farmer and anyone in the physical commodity chain has less confidence in an ability to hedge their risk and less confidence in the underlying price discovery.

Senator TESTER. OK. That is assuming the farmer hedges.

Mr. GENSLER. It does, but if the farmer does not have hedging available to them, they are then bearing the risk.

Senator TESTER. OK. So I guess what I am asking is, Is it the investor that loses there, or is it the farmer because this artificially depresses cash prices?

Mr. GENSLER. What it goes to, to at least me, Senator, is the reliability of the price discovery in the market itself in that it becomes less reliable. To some farmers, they would say, rightly, the future is \$2 more. Shouldn't I get \$2 more for my blood, sweat, and tears and all my inputs?

Senator TESTER. Right.

Mr. GENSLER. And that is a very valid question, and some farmers would not even use the contract because they would say it does not work.

Senator TESTER. OK. And you do not need to bring the previous one up because you can imagine it. The previous one, the cash price still went to \$3, which I think is an accurate example at some point in time. So the cash price, which is the market I sell on, there is no change. The change here is that the futures contract did not fall down to the price of the cash price. And so as a farmer who does not hedge, it is still \$3 a bushel. Who loses on that? Somebody has got to lose because if there is not a loss with convergence, what is the negative?

Mr. GENSLER. You are saying when it does converge?

Senator TESTER. When it does not converge.

Mr. GENSLER. Does not?

Senator TESTER. I get it when it converges. When it does not converge—convergence is where you want to be. If you do not converge, what is the real problem here? Is there a problem or is it just a fact we do not converge?

Mr. GENSLER. I believe it is a problem because the design of these contracts are that you can actually deliver, maybe not—maybe you would be the farmer that did not deliver, but that some farmer can put it in a vehicle or put it on a barge and actually physically deliver it.

Senator TESTER. So these future contracts are based on real grain. You are not going to have more future contracts than you have grain available.

Mr. GENSLER. There is supposed to be an ability to deliver into a futures contract, and even if there were more futures than there was grain, then anybody who has grain who meets the certain quality standards can deliver that grain into the future. You should be able to collect that \$2 if you were willing to transport the grain to the delivery point.

Senator TESTER. OK. Let us talk about the design that controls better, which is one of the solutions you talked about, and Dr.

Coburn said the world is flat, and he is probably right. If you design your contracts better, what would stop them from going to Europe or China—I do not know where these contracts are sold, but I assume they are sold other places—or Canada, other places than just here where they do not have as strict of controls? Or are the controls in place in all those other countries and they do not have this kind of—

Mr. GENSLER. We actually have the world's majority share of trading of futures on wheat contracts. There is Kansas City, Minneapolis, and Chicago, the three big ones. It is well over half. I cannot recall the exact statistic.

Senator TESTER. Does the convergence problem exist in the other parts of—

Mr. GENSLER. No. The convergence problem is big in Chicago. One of the things that is unique in Chicago is that market—which is only about 20 percent of the U.S. production—is the bellwether. That is the benchmark for a lot of historical reasons that had to do with Chicago's dominance over Kansas or Minneapolis in terms of—

Senator TESTER. I understand that.

Mr. GENSLER [continuing]. Risk capital.

Senator TESTER. Can you speak to foreign markets where they sell futures contracts? Is there a convergence problem there?

Mr. GENSLER. No, I am not aware of one, but maybe other experts could tell you later. I am not aware of a convergence problem there. It is really in the Chicago Board of Trade contract.

Senator TESTER. OK. What impact, if any, do price supports from the Federal Government have on futures?

Mr. GENSLER. I think that all economic factors—including price supports from the Federal Government and others—affect both cash and futures markets.

Senator TESTER. I will get to that in a second.

Mr. GENSLER. But I will try to address it now. I think that cash and futures are very linked. They should converge at the time of expiration. In grain markets as well as oil markets, the two relate. So any economic factor, whether it is Federal Government driven or otherwise, will affect both futures and cash markets, and particularly the outward dated ones.

Senator TESTER. Does supply and demand exist in the wheat markets?

Mr. GENSLER. I believe that supply-and-demand factors are very important in the wheat markets.

Senator TESTER. OK. That is good enough. So—and it was about 16 months ago—the price of wheat—and Senator Coburn was correct, the elevators would not buy it. But on their board they had somewhere around \$18 to \$20 a bushel, depending on what kind of quality you had. Now that same wheat is probably worth a third to 40 percent of what it was then.

That difference in the marketplace—and it is a difference that Senator Collins talked about her baker. I mean, that is why it went up. It went up at the farm gate, which, quite frankly, I love, but I do not like to see it go up and down crazy. We like some consistency. And if the futures market forced it to go up and was part of

the impacts that forced it to go up—which I believe it was; I think it was much more than supply and demand in that particular case.

Do you think that the three things that you talked about to change will solve that problem? And ultimately, in the end, what impact do you think that those three things will have on the cash price of wheat to the farm gate?

Mr. GENSLER. I think if the exchanges decided to do it by moving delivery points or forced load-out or this cash-settled contract, we would have convergence between the cash and futures market for sure. I think that those three things would lead to convergence.

The cash prices ultimately are tied, as you said, to supply-and-demand factors, but related to futures, they would be somewhere in between. I cannot predict, out of the 80 cents of lack of convergence now, whether it would be closer to the current cash price or closer to the current futures price, but obviously somewhere between that 80-cent spread.

Senator TESTER. To be clear, I am not sure the price does reflect supply and demand, to be clear, because quite honestly there are a lot of things that—I mean, if you get rain in Kansas, the price of wheat can drop, and nobody knows that that is going to increase production an ounce at that point in time.

Mr. GENSLER. Right.

Senator TESTER. Just for my information—6,500 futures contracts, how many dollars are in a futures contract? What kind of money are we talking about?

Mr. GENSLER. Well, it is not much because a futures contract is 5,000 bushels.

Senator TESTER. You are talking 325,000 bushels.

Mr. GENSLER. Right, times \$3 to \$4, so it is about \$1 million.

Senator TESTER. OK. And how many of these folks are out there trading this? How many traders are out there, do you know? How many of these 6,500-bushel contracts are out there? How many people are eligible to trade up to 6,500 futures contracts?

Mr. GENSLER. All the participants in the market are eligible to trade up to the 6,500 contracts.

Senator TESTER. So I could do it if I wanted to.

Mr. GENSLER. Yes. There are these exemptions that were previously referred to. Fifteen parties have hedge exemptions, and then there are these two no-action letters. I believe only eight or nine of them are currently over their limits right now.

Senator TESTER. OK. I appreciate your being here, and I appreciate your answering the questions. I, quite frankly, am like probably most people; I do not understand this. In fact, I do not understand it so bad that 22 years ago I got out of the conventional grain market because I did not want to have to put puts and calls and all that garbage. I just wanted to raise wheat and sell it for a reasonable price.

And so I made some conversions in my operation, but what I will tell you is this: If you can do things in the marketplace to stop artificially inflating or artificially deflating the price of wheat—and I am much more concerned about the latter than the former—you have been successful. Thank you.

Mr. GENSLER. Thank you, Senator.

Senator LEVIN. Thank you, Senator Tester. Senator Collins.

Senator COLLINS. Thank you, Mr. Chairman.

Senator Tester, are you telling us that it is easier to be a U.S. Senator than to be a wheat farmer?

Senator TESTER. I go back every weekend because it is much easier to be a farmer. [Laughter.]

Senator COLLINS. Mr. Gensler, let me ask you a basic question. Why does the CFTC set position limits for agricultural products but allow the exchanges to decide whether or not there should be position limits for energy products, like oil?

Mr. GENSLER. Senator, I am trying to figure that out myself. It is a lot of history before us. We were originally set up in the Great Depression, our predecessor was, and we set agricultural limits. When the oil products started trading in the late 1970s, there was a deference to the exchanges to do it. There are some agricultural products, like livestock, where there is also deference to the exchanges.

What is clear to us in terms of our legislative history, is that the exchange's only responsibility is to protect against what is called manipulation and congestion, and they only set position limits for the last 3 days of the spot month for oil products.

We have a responsibility under our statute to set position limits to protect against the burdens that may come from excessive speculation, this concept of making sure there is a minimum number of players in a marketplace. So we are going to look very actively through the hearings and hopefully post the hearings at possibly setting position limits for energy futures as well.

Senator COLLINS. I certainly hope that you will. I do not think it makes sense—even though I have great respect for the exchanges—to delegate that authority. It does not make sense to me that for most agricultural products the Commission is setting the position limits, but when it comes to energy products, it is left up to the exchanges.

Do you need legislative authority to set position limits when it comes to oil products, or do you already have authority?

Mr. GENSLER. I believe that we have ample authority to do it with regard to futures. As it relates to swaps and over-the-counter derivatives, we would have to work with Congress to get that authority.

Senator COLLINS. Well, I certainly want to give you that authority.

I want to go back to some testimony you gave. I believe you said that the index traders, the non-commercial traders, because of waivers and no-action letters may have held up to 60 percent of the outstanding wheat contracts. Is that accurate? Did I understand that?

Mr. GENSLER. Currently the index investors through swap dealers have about half of the market. It has ranged from as low as 35 percent to about 55 percent in the last number of contracts, but yes.

Senator COLLINS. So that is a huge influence on the market. And did that come about because of the exemptions that the Commission started granting in 1991 to the 6,500 wheat futures contract limit?

Mr. GENSLER. I think it was certainly facilitated by that, but I think the index investment came about in large part because there was a change of focus, maybe even philosophy, about 4 or 5 years ago that commodities were an asset class. Though some parties used to invest, it dramatically took off around 2004 and 2005. Your earlier reports have shown this in the oil markets as well and so forth.

Senator COLLINS. It is my understanding that the exemptions permitted four of the swap dealers to exceed that limit, so instead of being held to 6,500, one was 10,000, one was 17,500, one was 26,000, one was 53,000, and then there were two no-action letters that allowed an index-related exchange fund to hold up to 11,000 contracts, and another fund manager to hold up to 13,000 wheat futures contracts.

I do not know what the right number is for a position limit. I do not know whether the recommendation of PSI that it return to 5,000 is correct or whether 6,500 is correct. And I would look to the Commission to set the right level.

But I am concerned if index funds are not held to the same level that everyone else plays by and if there is a difference in the levels for commercial traders versus non-commercial traders.

Is there a reason that there should be a different limit?

Mr. GENSLER. Again, Senator, I am finding myself in vast agreement with you and the Chairman on these matters. The reasoning in the past was that the index investors or the swap dealers were hedging a financial risk, not necessarily a strict commercial risk tied to the ownership of grain. They were hedging a risk of inflation, that if they invested in commodities, they were somehow hedging their financial risk rather than a strict product or merchant risk.

Senator COLLINS. The problem is if it has an impact on the market as a whole. I understand that the index funds are just trying to do their fiduciary duty and get as good a return as possible. But I am concerned about what the impact is of this massive influx of funds and the number of contracts that are held by non-commercial traders.

Mr. GENSLER. Yes, and, Senator, I think that there is a very strong logic that whatever position limits we have be consistently applied across the markets; and whether they are at 6,500, as you said, or some other number. If we move forward in the oil space, we should find a consistent approach that makes these markets work to the benefit of the American public and ensure that they are fair and orderly and that we do protect against some burdens of the excess outsized positions.

Senator COLLINS. Exactly. And that is what I think we should do, vest in the Commission, if you need additional authority, to directly set those position limits in both agricultural futures markets and the energy futures markets, and then it seems to me they should be the same for all players. And that is what I would like to encourage you to take a look at.

I want to switch to another issue. Last year, we had a lot of discussion about closing what is known as the "London loophole," and it is my understanding that this is the loophole that allowed traders to trade U.S. oil futures contracts on a foreign exchange with-



out facing the same sort of position limits that they would on an American exchange. And, typically, I believe this activity took place on ICE in London, and there were various bills that we introduced to “close the London loophole.”

What the Commission did at about that same time is to enter into an information-sharing agreement with the U.K. regulator, the Financial Services Authority. But I am told that earlier this month—it was supposed to allow for better information sharing, and transparency—but I am told that earlier this month there was an incident that has caused many people to question the adequacy of that information-sharing agreement.

Specifically, it is my understanding that earlier this month PVM Oil Futures Limited, a London-based oil brokerage firm, admitted that one of its traders had been able to artificially cause the price of crude oil to spike by 2 percent in just 1 minute, and that this information was not conveyed promptly by the FSA, the British regulator, to the Commission.

What is your reaction to that incident?

Mr. GENSLER. The incident that you are referring to, I will call it a “rogue trader” at this broker in London on the Brent crude contract, not on the WTI but the Brent crude contract. We actually were informed by the FSA within a number of hours. I do not know if it was a half a day because there are some time differences and so forth, but I did see that report in the *Financial Times* on London. I do not know what it was referring to because it was not maybe in an hour, but it was certainly within half a day or so that we knew about it.

I think on the more substantive point, what we were able to do last year as a Commission is to make sure there is information sharing. We announced just 2 weeks ago that we are going to include in our Commitments of Traders report, in our weekly trading report of all the large trader positions on the West Texas Intermediate and other linked contracts of ICE. They are also subject to position limits as of last year. We are now looking at what other gaps might be remaining between our current regime with ICE and if there is anything further, again, to best protect the American public. The information sharing is going to be pushed out into the Commitments of Traders report, and they are actually committed and subject on the linked contracts to be within our position limit regime.

Now, I say “our position limit regime.” We have not set position limits yet. But if we were to set position limits, we would set it both on NYMEX and the ICE contracts.

Senator COLLINS. Thank you. Thank you, Mr. Chairman.

Senator LEVIN. Thank you very much, Senator Collins. And we would be asking you to let us know what your position is on that legislation to close the London loophole for the record, if you would.

Mr. GENSLER. I would look forward to doing that.

Senator LEVIN. I have a few additional questions for you, and then Senator Collins may have some. Then we will move on to the next panel.

We recommend in our report that the CFTC phase out all of the exemptions and waivers that have been granted to commodity index traders and to reinstate the 6,500 limit for them. Do you be-

lieve that you currently have the authority to take that step should you decide to do so?

Mr. GENSLER. I think that we have the clear authority to do it as it relates to the two no-action letters. Right on the face of it, they do not qualify for the bona fide hedge exemption. As it relates to all of the hedge exemptions, the other 15, I think that we have the authority, but those were issued under rules of the Commission, and so it takes a different process and approach, and—

Senator LEVIN. It would take a rulemaking?

Mr. GENSLER. Probably.

Senator LEVIN. All right. But you have the authority, should you decide to issue that rule?

Mr. GENSLER. Well, I am going to have to ask my general counsel—which I should be thanking you for, by the way, that Dan [Berkovitz] joined us at the Commission.

Senator LEVIN. He looks very happy where he is at. Can you find out whether or not he believes that authority exists?

Mr. GENSLER. He said he will do it for us, and we will get back to you. I believe we do have it, but if there are any gaps in that, we will be asking for your help on that.

Senator LEVIN. All right. Exchanges typically charge a transaction fee and a clearing fee for each commodity trade that takes place on the exchange or is cleared. So, naturally, the exchanges do not want limits that are going to reduce their fee income.

Now, is that an economic consideration that you will be taking into account in your review?

Mr. GENSLER. No.

Senator LEVIN. Finally, let me give you this series of questions that are linked together. You said that the major influx of derivative dealers or index traders have contributed to the failure of convergence. You have told us that this afternoon.

You have told us, I believe, that the lack of convergence hurts people who want to hedge, such as elevators. Are you with me so far?

Mr. GENSLER. Yes. That is a “yes” to both of those.

Senator LEVIN. All right. Now, if elevators are hurt, because they cannot effectively hedge, is it fair to say that farmers who deal with those elevators would also be hurt?

Mr. GENSLER. Yes. I believe that farmers, merchants, anyone down the production line who cannot hedge is left with the risk that then they do not have as good an opportunity. This is at the core of these markets to make sure that farmers, merchants, elevator operators, and even ultimate purchasers can hedge their risk and make their own economic choices whether to hedge or not to hedge.

Senator LEVIN. All right. Now, some have said that if you imposed standard position limits on commodity index traders, it will not be effective because they are going to get around the limit by setting up new subsidiaries to engage in commodity index trades. Should you decide to impose the standard position limits, what is your response to that argument—that you could not do it if you wanted to, they will just get around it?

Mr. GENSLER. I think that they need to be set at the control or legal entity position. I would also say that we need to work to—

gether on the over-the-counter derivatives marketplace. If we set them in the futures marketplace, we have to be cognizant that some trades will just move over there to the over-the-counter derivatives marketplace.

Senator LEVIN. Thank you very much.

Mr. GENSLER. Thank you, Mr. Chairman. Thank you, Senator Collins.

Senator LEVIN. We appreciate very much your testimony. Thanks.

I would now like to welcome our next panel to this afternoon's hearing. First, Thomas Coyle, who is the Vice President and General Manager of Nidera Inc., and the Chairman of the National Grain and Feed Association.

Hayden Wands, who is the Director of Procurement at Sara Lee Corporation and Chairman of Commodity and Agriculture Policy at the American Bakers Association.

Mark Cooper, who is the Director of Research for the Consumer Federation of America.

And Steven Strongin, Head of the Global Investment Research Division of Goldman Sachs Group.

We very much welcome you. We appreciate your cooperation. As you heard before, pursuant to Rule VI, all witnesses who testify before this Subcommittee are required to be sworn, so at this time I would ask all of you to please stand and to raise your right hand. Do you swear that the testimony you will provide this Subcommittee will be the truth, the whole truth, and nothing but the truth, so help you, God?

Mr. COYLE. I do.

Mr. WANDS. I do.

Mr. COOPER. I do.

Mr. STRONGIN. I do.

Senator LEVIN. The timing system is, again, a 10-minute timing system. I guess we are going to ask for 7 minutes on this one because we have four witnesses on this panel, so let me try a 7-minute round for your oral testimony. Your entire statement will be made part of the record, and we will first call on Mr. Coyle.

**TESTIMONY OF THOMAS COYLE,<sup>1</sup> VICE PRESIDENT AND GENERAL MANAGER, CHICAGO AND ILLINOIS RIVER MARKETING LLC, NIDERA, INC., AND CHAIRMAN, NATIONAL GRAIN AND FEED ASSOCIATION**

Mr. COYLE. Thank you, and good afternoon, Chairman Levin. I appreciate the opportunity to testify today, and I congratulate you on the recent publication of a very interesting and insightful report about the U.S. wheat markets. We believe this extensive report looks at futures markets from a new perspective. We agree strongly with the key conclusions and believe it is critical that steps are taken to correct the imbalances documented in the report.

That said, we believe there are actions that can be taken to achieve this goal before implementing a restriction on trading, which is a key recommendation of the report.

<sup>1</sup> The prepared statement of Mr. Coyle appears in the Appendix on page 71.

As capital invested in agricultural futures has increased dramatically in recent years, we have become convinced that it has reduced the effectiveness of futures as a hedging tool for grain hedgers. The impact has been very dramatic on the Chicago Board of Trade wheat contract where commodity index traders hold 56 percent of open interest when spread trades are excluded. Their share of open interest has remained at a consistently high level regardless of price and today represents ownership of more than 160,000 contracts, which is almost two times the size of the U.S. soft red wheat crop.

These positions held by commodity index traders are primarily long only, held for extended periods, and are not responsive to changes in price. We believe this situation, in which a large portion of the open interest is not for sale at any price for extended periods, has drained liquidity out of the contract and contributed to extreme volatility.

We believe strongly that invested capital has been the significant factor contributing to a disconnect between cash wheat values and wheat futures prices—a view confirmed in your report.

Efficient performance of futures markets is critically important to grain hedgers and producers. Futures markets help grain hedgers manage price and inventory risk, assist producers and elevators in valuing their product, and facilitate risk transfer and marketing opportunities. Performing these key tasks requires a dependable relationship, convergence between cash and futures.

Last year's extreme volatility in wheat markets emphasized this disconnect between cash and futures for soft red wheat. While cash markets work to seek fair value of the crop, traditional basis relationships between cash and futures no longer seemed to apply. The result was an unprecedented increase in basis risk for grain elevator operators and a serious concern for the banks that provide their financing. The imbalance was so acute that basis levels in the interior increased to more than \$2 per bushel to offset the high price of futures and seek the market value for physical bushels.

As cash and futures diverged, grain hedgers were also subject to larger and larger margining requirements to maintain their hedges. The Ag banking system performed well in 2008, but our industry narrowly escaped a real tragedy in which many firms could have been forced out of their hedge positions and out of business. Today, there is a real concern about whether lenders have the capacity to respond to a repeat situation.

To put this serious situation in perspective, I will share a case of a very well-run and conservative grain elevator operation in Michigan. The company projected a \$10 million financing shortfall, but in a 3-week period in early 2008, the amount grew to \$70 million. For a country elevator operation, this is unheard of. Fortunately, we were able to acquire their inventories and take assignment of their forward contracts. I can give you an example of a similar situation in Wisconsin, where the result was not so fortunate.

The risk of running out of capital was so severe in 2008 that many elevators were forced by financial constraints to reduce or even eliminate cash forward contract offerings to producers. Producers were frustrated in their attempts to lock in favorable pricing

opportunities at a time when fuel costs and other input costs were escalating dramatically. Our industry's traditional function as a conduit for efficient pricing for the producer was impaired as the relationship between cash and futures deteriorated in wheat.

The NGFA has worked actively with the CME for solutions to these performance problems, and we appreciate the CME Group's openness and responsiveness to our industry's concerns. We hoped that markets would correct themselves over time, as efficient markets tend to do over time. However, the extraordinary situation in the wheat contract has prevented the market from correcting in a timely manner.

The CME has just implemented a number of changes to the wheat contract, and these follow a range of changes that were made a year ago as well. Included in the recent changes are seasonal storage rates and the addition of many new delivery locations. These are significant changes that should have a positive impact.

We are hopeful that these contract changes will move the wheat contract back towards convergence, but they may not be enough. If the current changes do not re-establish convergence, the CME Group must be prepared to move quickly on additional measures to complete the task. We believe the CME Group is committed to restoring contract performance and already has a concept of variable storage rates under consideration that we believe holds promise. It will be critically important that the CFTC move contract improvements through its approval processes expeditiously.

One important component in the discussion is enhanced transparency in futures markets. The Commitments of Traders report changes implemented by the CFTC in early 2007 were very useful. To further enhance transparency, we recommend that the Commission add the same level of detail to the lead month—the contract month with the largest open interest. While this would not necessarily improve convergence, the information would assist hedgers in their decisionmaking and would also assist the Commission and policymakers in evaluating participation of various types of traders.

Finally, the one area of the report that we are not ready to embrace is the recommendation to restrict participation by these new financial participants. Despite the difficult environment and the imbalance they have created, we would prefer to see the wheat contract come back into balance with minimal intervention. However, if contract changes at the CME are unable to achieve convergence quickly, we recognize that restrictions may become necessary.

That ends my testimony, and I will be happy to answer any questions.

Senator LEVIN. Thank you very much, Mr. Coyle. Mr. Wands.

**TESTIMONY OF HAYDEN WANDS,<sup>1</sup> DIRECTOR OF PROCUREMENT, SARA LEE CORPORATION, AND CHAIRMAN, COMMODITY AND AGRICULTURAL POLICY, AMERICAN BAKERS ASSOCIATION**

Mr. WANDS. I would like to thank the Senate Permanent Subcommittee on Investigations, and especially Chairman Carl Levin and Ranking Member Tom Coburn, for holding this critically important hearing on excessive speculation in the wheat markets. Again, my name is Hayden Wands. I am Director of Procurement at Sara Lee. I am here today speaking on behalf of the American Bakers Association as the Chairman of the American Bakers Association (ABA) Commodity and Agricultural Policy Committee.

Since the inception of the grain exchange over 150 years ago, bakers have utilized the exchanges for purchases of necessary ingredients. These markets enabled farmers to know what price they can receive for their grains in the coming months and years and allowed manufacturers to plan for their businesses' futures by using these same price points as a component for the food products they produce. This was, and still should be, the intent of these critical markets.

Unfortunately, the use of these markets has dramatically changed since 2005. With the influx of index funds, volatility increased and commodity prices rose to record levels in 2008. While other supply-and-demand issues also impacted prices in 2008, the record investment of index funds cannot be overlooked. They are buying agricultural commodities and using the investments as a new marketable asset class. Grain is not an asset class, but an ingredient in many basic foodstuffs—staples of the American diet.

The resulting volatility caused by the influx of index funds in the wheat market has been dramatic. Historically speaking, a 10-cent price change in wheat futures contracts was considered extreme. But today market fluctuations of 30 to 40 cents a day are all too common. Currently, index funds own 196 percent of this year's wheat crop. To put that in perspective, index funds own 22 percent of the soybean crop and only 13 percent of the corn crop.

The increase in volatility can be seen in the increase of the monthly trading ranges of wheat. In 2005, the monthly trading range's average was 39 cents a bushel. In 2008, trading ranges increased by 461 percent to \$1.81 a bushel and are currently at 269 percent above 2005 levels at \$1.05 a bushel. As long as index funds continue to hold such a large share of wheat contracts and do not have to operate within limits, volatility in the markets will continue to harm farmers, food producers, and American consumers.

The significance of the index funds' positions is increased due to the finite nature of the supply of the physical wheat. With accumulation of long-only positions by index funds, the availability of futures contracts diminishes as they effectively take contracts out of the available pool. As a result, the few remaining contracts are price rationed to reduce the demand for additional purchases of contracts, which greatly increases volatility.

Bakers cannot escape the impact of index fund activities. For example, as wheat prices skyrocketed to record highs in 2008, bakers

<sup>1</sup> The prepared statement of Mr. Wands appears in the Appendix on page 76.

were forced to increase prices for their baked goods or consider other equally undesirable measures, such as decreasing staff or shutting down operations entirely.

Members of the ABA testified before Congress regarding this impact. Frank Formica, owner of Formica Brothers Bakery at Atlantic City, New Jersey, testified before the House Committee on Small Business, noting he typically paid \$7,000 a week for flour, but in April 2008, he paid \$20,000 a week for the same amount of flour—a three-fold increase in cost. Many other bakers shared similar stories about flour cost increases during this same time period.

The impact of market volatility has driven away smaller but extremely important market participants. Small businesses, including bakers, grain elevators, and millers, who cannot qualify for large credit lines may find it extremely difficult to participate in the current market. These businesses may look for alternative hedging mechanisms since hedging in the futures market may become an activity reserved for companies that carry extremely large amounts of liquidity and credit.

In addition, the lack of convergence continues to be a major issue in the futures market. ABA strongly believes that the lack of convergence exhibited in the market, and particularly in the Chicago wheat market, is a symptom of the problem caused by the accumulation of long-only positions by index funds rather than the root of the problem itself. If contract limits were placed on index funds, lack of convergence would be addressed.

Index funds have erroneously been categorized differently from that of a traditional speculator. They operate under the auspices of a bona fide commercial hedger. Bona fide commercial hedgers receive an exemption allowing them to operate without contract limits and are only limited to the actual amount of grain they produce, store, or use for feed or food production. Due to this discrepancy, the index funds currently operate in the market without encountering any natural or regulatory limits to the amount of contracts that can be purchased.

ABA strongly believes that index funds must operate within the confines of a contract limit similar to the limits that traditional speculators have efficiently operated for many years. Placing limits on hedge fund activity will be critical in restoring the integrity of the Chicago wheat contract, as well as all wheat contracts, and will allow the market to return to manageable volatility. As such, the ABA fully supports the Subcommittee's recommendation to phase out existing wheat waivers for index traders by creating a standard limit of 6,500 wheat contracts per trader.

Volatility in the markets is a major concern to the baking industry. Today's volatility represents millions of dollars daily in undue financial risk. Commodity markets will be able to once again respond to natural and fundamental supply-and-demand influences through implementation of contract limits.

I would again like to thank Chairman Levin and Ranking Member Coburn as well as Members of the Subcommittee for the opportunity to provide the views of the American Bakers Association on this important subject. Thank you.

Senator LEVIN. Thank you so much, Mr. Wands. Mr. Cooper.

**TESTIMONY OF MARK COOPER,<sup>1</sup> DIRECTOR OF RESEARCH,  
CONSUMER FEDERATION OF AMERICA**

Mr. COOPER. Thank you, Mr. Chairman. In my testimony, I outline a broad empirical and theoretical explanation of how excessive speculation has made a major contribution to the recent gyrations and failures in commodity markets and why they harm the public. I have made my case with respect to oil and natural gas, which is what I know best, but based on my reading of the Subcommittee's analysis of the wheat market, I am convinced that everything I have said applies to wheat as well.

The debate over excessive speculation is over. The reports of the Subcommittee on oil, natural gas, and most recently wheat, as well as my own analyses of oil and natural gas, which antedated those of the Subcommittee, leave no doubt about the fact that excessive speculation was an important cause of problems in commodity markets. The only question on the table is: What should we do to prevent excessive speculation from afflicting these markets in the future?"

Good analysis must be the launch point for good policy. A valid scientific claim that A causes B requires three critical elements that are in your report:

One, temporal sequence. A must proceed B.

Two, correlation. A and B should move together in the expected direction.

And, three, explanatory linkage. There needs to be a mechanism that shows how and why A would move B.

The policy relevance of scientifically valid causal claims is that policymakers can adopt policies to change A and expect that the effect will be to change B. In the case of commodity prices, if it is concluded that excessive speculation is harmful and it is concluded that the influx of financial investors—as Mr. Gensler calls them, perhaps to preserve the good name of speculators—then policies to dampen the influx of those funds will reduce speculation and improve the outcome for consumers.

It is absolutely clear that these markets are vital to the functioning of our economy. The purpose of commodity markets is to smooth the flow of production in the real economy to allow farmers and bakers to plan, hedge, and organize their production. It is absolutely clear that excessive speculation disrupts this flow. It raises price, creates volatility, drives these people out of the market, makes it difficult to hedge, and difficult to plan their production. You have ample evidence of that.

This Subcommittee's research demonstrates the three elements of causal explanation. There is no doubt about the temporal sequence between the influx of funds and the dramatic increase in price volatility and other aberrations in these markets. And when you buy a futures contract, as you have heard, you influence the price. You set the price by holding that open position at the price you have agreed to. Explanatory linkages here as well. These financial investors behave according to a financial logic which treats commodity futures as assets, not resources. They pay less attention to the fundamentals of the real economy and more attention to fi-

<sup>1</sup> The prepared statement of Mr. Cooper appears in the Appendix on page 87.



nancial formulas. Index traders just kept pouring money in and adjusting their portfolios according to the logic of their index managers. When regulators finally threatened oversight and when general liquidity in the economy dried up, the financial investors vacated the market. And lo and behold the aberrations declined, as you have seen.

Near-perfect correlation like this, with perfect correlation on the way up and perfect correlation on the way down, is very rare and very persuasive. The reason the opponents or critics of your bill—your report cannot offer you an alternative explanation is that finding that perfect correlation is very difficult. They just say, well, it must have been something else because we do not think it was what you think it was.

But even more importantly, you have heard today the underlying mechanisms that link the influx of traders to the problems. Traders profit from rising and volatile prices in a variety of ways, and they contribute to those outcomes. As account values rise, excess margins and special allowances allow traders to take money out of their market or leverage more trading to keep the upward spiral going. Traders and exchanges benefit from transaction fees that grow with value and volume. As long as there is more money coming into these markets that is willing to bid up the price, the old money already in the market benefits by staying long.

Of course, it is easy to ensure the inflow of funds when the managers of those funds also are the advisers to these financial investors who tell them what to do. It is easier to sustain the upward spiral of prices when speculators are also the analysts who release reports hyping the market with reports of how high prices are and how they will go. When oil was \$145 a barrel last year, Wall Street was telling us they had to go to \$200, it would go to \$200. I will remind you it is \$60 today after the speculative bubble has burst.

So setting position limits is one step that is absolutely critical. Defining entities properly is another step. Mis-defining index traders as commercials was disastrous. They are not. They do not take delivery. They do not look at the real market. They only look at their financial performance.

Eliminating conflicts of interest would be extremely important as well. We have the individual firms on too many sides of this transaction, and ultimately we really have to think about the incentives we have given for the financialization of everything in America as an asset class and fail to pay enough attention to the real economy. We have to change the incentives so activity goes back into the real economy as opposed to these purely financial activities.

Thank you.

Senator LEVIN. Thank you very much, Mr. Cooper. Mr. Strongin.

**TESTIMONY OF STEVEN H. STRONGIN,<sup>1</sup> HEAD OF THE GLOBAL INVESTMENT RESEARCH DIVISION, THE GOLDMAN SACHS GROUP, INC.**

Mr. STRONGIN. Thank you very much, Chairman Levin. We commend you for your leadership in addressing the factors affecting the functioning of the commodity markets, which we view as a crit-

<sup>1</sup> The prepared statement of Mr. Strongin appears in the Appendix on page 129.

ical endeavor. We appreciate the opportunity to present our thoughts on your report entitled “Excessive Speculation in the Wheat Market.” This is a substantial piece, which provides a rich and detailed history of the wheat market and raises critical issues, such as the importance of price convergence between the cash and futures markets.

I have been involved with the commodity markets for the last 15 years, having helped construct and manage commodity index products for much of that time. I served as a member of the Policy Committee for the Goldman Sachs Group, Inc. (GSCI), from 1996 to 2007, at which time the index was sold to the S&P, and I have continued to serve on the Policy Committee maintained by the S&P.

When we conceived of the GSCI in the early 1990s, we did so with an eye toward improving liquidity by helping fill the gap between the large numbers of producers who needed to hedge their risk and the more limited number of consumers who are willing to provide those hedges. Since then, passive investments have become a crucial source of this liquidity. Capital provided by passive investments is needed to balance these markets, helping them to fulfill their mission of allowing producers and consumers to operate more efficiently and manage their price risk. Yet investors who have provided this liquidity have been, in our opinion, inappropriately characterized as speculators with no real economic interest in these markets.

Most of these investors are, in fact, large-scale asset allocators who seek to invest in markets in which capital is in short supply. In doing so, they aim to earn a reasonable long-run return by improving the underlying economics of the industry. They, therefore, require real economic justifications for their investments.

As such, their primary concerns mirror those of the Subcommittee—namely, what is the realistic capital needed by these markets? Will investment distort prices and, therefore, reduce long-run returns? And are these markets liquid enough not to be distorted by passive capital?

Reflecting these concerns, we have sought to structure the GSCI so that it provides the greatest possible liquidity with the least possible market impact from passive investments. We have regularly assessed whether capital allocated to individual contracts exceeds the ability of these markets to absorb that capital.

Turning our attention to the specific issues raised and recommendations made by the Subcommittee’s report. As we mentioned earlier, this is a substantial piece, but our ongoing work assessing the liquidity of the GSCI leads us to some important and differing conclusions from some of those reached in the report. We outline these key differences here and refer you to our written testimony for greater detail. We hope our thoughts prove useful.

First, the Subcommittee report concludes that passive index investments have been responsible for price volatility in the CME wheat market. We monitor distortions in the markets by comparing market performance across contracts. For example, comparing price performance of Chicago wheat to the performance of other agricultural markets without passive index investments. In these markets, we observe similar price moves. For example, wheat contracts

not included in passive indices, such as Minneapolis wheat, have experienced even greater price volatility than Chicago wheat. For example, Minneapolis wheat increased by over 270 percent from January 1, 2007, to the peak, while wheat prices in the Chicago market rose by 170 percent.

We also monitor this issue by looking at the performance of commodities that are subject to similar economics as Chicago wheat, such as rice and oats. Here we also find similar price patterns. For example, Chicago wheat, and oat prices have declined by 58 percent and 54 percent, respectively, from the peak to July 15, 2009. This analysis strongly implies that passive investments were not the cause of the price distortions in the Chicago wheat market. Therefore, restrictions in passive investments would not likely have lessened price volatility.

We would also note that our work on the impact of speculation shows that non-index speculation has had far more impact than passive index investments, both per dollar invested and in total. The reason for this is simple. Index investments are made slowly and predictably, and contracts are exited well before settlement. Non-index investments, however, tend to be strongly correlated with underlying fundamentals, and they tend to be focused on price levels. Thus, their size is adjusted to passive index investments, offsetting the effects of those investments.

Second, the Subcommittee report also concludes that passive index investments impede price convergence in the Chicago wheat market, which we believe is a very important issue. However, our view is that this lack of convergence is driven by flaws in the design of the futures contracts. Put simply, the high degree of flexibility of delivery options built into the Chicago futures contracts and the difficulty of delivery into those contracts for producers makes the futures more valuable than the underlying wheat. This is particularly true when the volatility of cash wheat prices is high. If we compare the value of these options with the basis volatility raised as a concern by the Subcommittee, it is clear that contract design caused much of the basis risk.

The importance of the delivery restrictions in the Chicago wheat market, pushing up the value of the futures relative to the cash market is something the Chairman and the Members of the Subcommittee have already highlighted with respect to the WTI market. We think the solution parallels suggestions made by the Subcommittee about oil—namely, expand the number of delivery sites and generally ease the terms for delivery.

The Subcommittee also suggests that position limits or the elimination of index investing would reduce volatility in wheat prices. Given our view that index investing did not cause price volatility or convergence issues, we do not think there will be much to gain by implementing such restrictions. However, there could be significant negative consequences.

First, a large number of index investors are based outside the United States. Given that there are equivalent contracts traded on non-U.S. exchanges, much of the activity generated by these investors would likely migrate offshore.

Second, the proposals currently being suggested would not actually restrict the aggregate size of the positions taken by U.S. inves-

tors. Instead, these positions would likely be splintered across multiple brokers, multiple ETFs, and multiple mutual funds so that each of these vehicles would remain below individual position limits. In stressful market conditions, such a splintering would likely lead to even greater market volatility as the sale of large positions tends to destabilize markets under stress. When these positions are in the hands of a single party or a small numbers of parties, their orderly sale is possible. However, when these positions are in the hands of multiple dealers or funds, each dealer or fund manager is incentivized to sell quick before the others do. This is especially true for dealers running smaller trading books or for fund managers who compete for the best relative performance. For these participants, a faster sale is best. This can lead to disorderly markets and extreme volatility. Thus, it is our view that splintering existing positions could lead to greater price volatility and increase the likelihood that prices overshoot underlying fundamentals.

Attempts to regulate volatility have rarely, if ever, succeeded. Yet they often have unintended and significant consequences. Therefore, as we look to the future, we think the harmful volatility that has been observed in markets in the recent past begs us to focus on the question of which types of market rules and oversights allow participants to best manage their risk at a reasonable cost.

Thank you for taking the time to listen to our prepared remarks, and we look forward to answering your questions.

Senator LEVIN. Well, thank you all very much for your testimony. Let us try a 10-minute round here for this first round of questions.

Let us start with you, Mr. Coyle. Your testimony as fairly dramatically that producers have been frustrated, cash forward contracts were impaired because the relationship between cash and futures markets deteriorated. You are hopeful that contract changes will help, but you said that they may not be enough. And you indicated that if the contracts do not achieve convergence quickly, intervention may be necessary. I am trying to summarize your testimony.

How quickly do they need to converge in order to meet your standard?

Mr. COYLE. I would say that we would want them to converge this crop year. It takes a certain amount of time to make these changes, but there have been changes implemented already, and I would expect that sometime between September's expiration and December, the CME can roll out their next change in contract specs if they do not see that the current changes have had the impact.

While the changes they have made are very positive, there is a certain amount of skepticism that it will actually achieve the goal. Certainly it is in the right direction.

Senator LEVIN. Do you believe that the dramatic increase in the investment by the index traders, contributed to the lack of convergence?

Mr. COYLE. No, sir. I believe it caused it, singlehandedly. Not a contribution. It is the single issue that has caused the problem in convergence.

Senator LEVIN. You go even beyond the CFTC director.

Mr. COYLE. Yes, sir.

Senator LEVIN. Mr. Wands, do you believe that the huge investment by index traders is either a contributing, major, or exclusive reason why we have seen convergence fail?

Mr. WANDS. Well, we feel that their presence and their size has exacerbated the problem dramatically.

Senator LEVIN. Is it fair to say that you feel it is a major factor in the failure of convergence?

Mr. WANDS. It is a predominant factor, yes.

Senator LEVIN. All right. Mr. Cooper.

Mr. COOPER. I actually agree with Mr. Gensler, and certainly when I testified in oil—fundamentals matter and so they do play a role here. But excessive speculation matters, too. That is the important point, and as I saw it, at least \$40 a barrel, it grew to \$65 or \$70 a barrel. That is enough money to get your attention even if fundamentals count for something else.

Senator LEVIN. All right. Now, Mr. Strongin, do you agree with Mr. Coyle and Mr. Wands that the influx of these index funds into the market, which now results in them controlling about 50 percent of the market, is either the factor, as Mr. Coyle said, in terms of the loss of convergence or a principal factor, as Mr. Wands said, in terms of loss of convergence? Would you agree with that?

Mr. STRONGIN. I would not, Mr. Chairman, respectfully.

Senator LEVIN. That is all right. Now let us get to the point that the contract was not significantly changed until recently. Is that not true, Mr. Strongin?

Mr. STRONGIN. It has not changed effectively at all.

Senator LEVIN. And yet we see this huge spike in the futures contracts and the huge gap that now exists between futures and cash prices. And the contract did not cause that, presumably, or the shortfalls in the contract did not cause that, because that spike took place while the contract did not change.

Mr. STRONGIN. The problem is that there is an embedded option inside of the futures contract for below-market cost of storage, meaning that if you own the futures contract, you can avoid paying the full price of storage and store wheat.

Senator LEVIN. That was true for 5 years, wasn't it?

Mr. STRONGIN. Absolutely true.

Senator LEVIN. All right. So that has not changed.

Mr. STRONGIN. No. But the value of it did change. There are two things that drive the value of it: one, the cost of storage; and, two, the volatility of the prices around that storage. And as we saw in many markets in this environment, the volatility picked up a lot, and options increase in value when volatility goes up.

Mr. Gensler referred to this—the cost of storage went up because the grain elevators were full, and the shadow price of the grain elevator storage, because they had run out of space, was even greater. As a result, that value of below-market storage went way up. So the option value went way up, and that is effectively what we are applauding when we look at the basis.

Senator LEVIN. Let me go back now to Mr. Coyle. Can you comment on storage prices and whether or not the change in storage prices can explain this increase in the basis gap?

Mr. COYLE. Yes, sir, I can explain it, and I would say with certainty that is not the case. Yes, storage costs have gone up, and,

yes, I will agree with Mr. Strongin that there is a contract design issue. I will even agree that storage changes, like the variable storage rate the CME will next consider, can have an impact. And recent changes in the storage rates are a move in the right direction.

However, at this moment we have a record number of shipping certificates that have been issued against the——

Senator LEVIN. I am sorry. Record number of——

Mr. COYLE. Shipping certificates. That is a representation of inventories. A record number of shipping certificates issued against the CME futures contract, and that has not solved the problem. And we do not have consumers taking ownership of those shipping certificates and those inventories because they think it is a good value because it is a cheaper source of cash.

Senator LEVIN. Well, I am not sure I understand your explanation as to why you disagree that the storage cost shift cannot explain this increase in the gap between futures and cash prices. Try it again.

Mr. COYLE. While it may be more costly to build today, we have always had the issue of storage, of full carry. In the current environment, we have a market that is full carry, which means it currently pays all of the costs of storage, even the higher Board of Trade storage rates, and we still have a 70-cents-per-bushel convergence problem.

To suggest that the optionality of owning the Board of Trade Futures, which means it gives you the opportunity to have the access to this cheaper storage, is a reason that the futures price is higher is just something that we would disagree with.

Mr. COOPER. Chairman Levin, I would take another tack at his answer because you focused on the cost of storage and the value of storage, but he hypothesized an increase in volatility. I would submit, as I do in my testimony, that the presence of these indexed funds is the cause of that increase in volatility. So at that level, the answer is too cute by a half.

Senator LEVIN. All right. Let me go back to Mr. Coyle. You are something of an expert, I believe, in terms of elevators, are you not?

Mr. COYLE. Yes, sir.

Senator LEVIN. What is your expertise?

Mr. COYLE. Well, I manage a business that happens to own the largest Board of Trade delivery elevator for corn, beans, and wheat, so we specialize in grain storage, and I am a member of the grain industry, so I have spent most of my career managing grain elevators and the risk around those.

Senator LEVIN. Now, when there is a lack of convergence, who is hurt? You are an expert. Tell us.

Mr. COYLE. The first person that is hurt is the grain elevator operator because, by definition, the convergence problem increases the amount of basis risk. A grain elevator that buys grain, whether it is Michigan, Wisconsin, Ohio, Indiana, anywhere, buys grain assuming a relative relationship to the Board of Trade, finds that as the prices go up after he bought the grain that the basis is lower 6 months down the road after he has paid the cost to store that grain. So that would be the initial cost.

But then there are the other factors. The farmer, of course, is then hurt, because as the grain elevator operator has more risk, he has to pass that along to the farm community through lower basis levels. In addition, as you have got this basis convergence problem, banks are more concerned about loaning money, so your cost of money goes up. And maybe you even get into a situation, as we did last year, where there is a concern that there is not enough capital at all, and so you stop offering bids to farmers.

I would say in the last 12 months, probably the single biggest person harmed would be the farmer, because, in fact, the grain elevators stopped bidding for grain 6 months out, 7 months out, 8 months out because they were afraid they would not have the capital to margin their accounts.

Now, this is not 100 percent of the problem with convergence. The fact is, in 2008 when the market rallied, there were a number of issues that made the market higher. It could be the biofuels, the fight for acreage. There are a number of things that made the market go higher, but this convergence problem does put at risk the availability of capital to run your business.

Senator LEVIN. In addition to the elevator operator and the farmer, tell us about the consumer. How does that get passed on?

Mr. COYLE. We have heard the comments that costs have gone up, and I think that is true, but again, a number of issues have had an impact on why the price of commodities is higher. But the whole issue of convergence is that the basis levels actually went lower to offset the price of higher futures. While the price of futures went from \$5 to \$6, basis levels went from \$.25 under to a \$1.25 under. In reality, the price that the farmer was selling grain at, and the price that the consumer was paying, was the fair value for wheat, right? So I wouldn't argue that there was so much volatility and so much unknown and so much risk that overall prices were higher. But, by and large, the higher futures price was offset by a drop in the basis.

Senator LEVIN. Finally, let me just ask one question of Goldman Sachs' representative Mr. Strongin. You have indicated you don't think there should be position limits on index traders at all, is that correct?

Mr. STRONGIN. I said that position limits would likely not fix this problem, sir.

Senator LEVIN. Do you oppose position limits on index traders?

Mr. STRONGIN. I don't think it will help the problem, and yes, I do oppose it.

Senator LEVIN. How about other types of folks who you have said have a bigger impact on futures than index traders. Should anyone have limits?

Mr. STRONGIN. Actually, we have argued generally that the position limits should be on speculative positions. They should be generally applied. And probably the most important notion would be what some of our internal people would sort of say, look to, look through, which is putting the position limits on the end users.

Senator LEVIN. Would that include your customers?

Mr. STRONGIN. That would include our customers.

Senator LEVIN. So you do believe there should be position limits on index traders' customers?

Mr. STRONGIN. Yes. We don't think—index positions on the index traders or the hedgers—not going through all the terms that were used to describe the hedgers here—really is about form of investment as opposed to actual position limits, where if you put it on the customers, it is actually changing the position limits and the positions.

Senator LEVIN. Let me just be real clear. You believe there should be position limits on the customers of index traders?

Mr. STRONGIN. Yes.

Senator LEVIN. Thanks. Thank you. Dr. Coburn.

Senator COBURN. Let me ask this question of Mr. Coyle. What has the price convergence problem been for wheat at Minneapolis?

Mr. COYLE. We have not had a convergence problem in the Minneapolis—

Senator COBURN. Do they trade index funds there?

Mr. COYLE. I understand very little.

Senator COBURN. Very little. What about Kansas City?

Mr. COYLE. They do have index trading there. I am not aware that there is a convergence problem in Kansas City.

Senator COBURN. So they have index trading there, but they don't have a convergence problem yet. Our position on the Chicago Exchange is that there is a correlation between index trading and price convergence.

Mr. COYLE. Yes.

Senator COBURN. Explain that to me.

Mr. COYLE. Yes, sir. I think the issue is magnitude. We have a large index trading in soybean and corn futures, as well. But as Mr. Wands mentioned, you have a much smaller share, all right, on a relative basis if you compare that—

Senator COBURN. You mean less than the 50 percent?

Mr. COYLE. Yes, less than 50 percent, 35 percent, let us say, rather than 55 percent. But also, if you look at the magnitude of the crop, as Mr. Wands said, the open interest held by index funds is 13 percent of the size of the corn crop. In the case of soybeans, it is 22 percent. In the case of wheat, it is 195 percent. It has just out-balanced the size of the crop relative to size of the market participation.

In reality, that has actually gotten worse, because last year, we had a huge production in the United States, 600 million bushels of wheat. This year, it is only 414 million bushels. So in reality, a year ago, that same number was 145 percent. This year, it is 195 percent. It is a function of just too much for the market to handle.

Senator COBURN. OK. Does the higher volume generated by the commercial index traders actually increase liquidity or decrease liquidity, in your opinion?

Mr. COYLE. In my opinion, it decreases liquidity. It actually increases volume, but it actually drains liquidity. If you have half of the trade that won't sell, then when the next buyer wants to buy, they can only buy half of what is out there.

Senator COBURN. Well, but they do sell. They just roll.

Mr. COYLE. They roll, but they buy and sell it the same day.

Senator COBURN. Yes.

Mr. COYLE. If we have a business, someone wants to buy U.S. wheat and the price rallies 50 cents a bushel and the farmer has



already sold most of what he wants to sell this month, where does the next sale come from? At this point, it comes from a speculator that wants to be short because it is not going to come from the primary long. So in a normal market situation for——

Senator COBURN. Fifty percent of the primary long?

Mr. COYLE. Yes, sir.

Senator COBURN. OK, and not—some primary longs will sell, but 50 percent of them won't.

Mr. COYLE. Fifty percent of the open interest—56 percent of the actual flat price related open interest is held by somebody that will not respond to short-term economics.

Senator COBURN. OK. So let me go to you, Mr. Strongin. Have I got this right, that I could actually buy an index fund, pay the storage cost, and net about 4 percent versus the cost of my money, if nothing changed in terms of the price of the contract and I just kept rolling the contract?

Mr. STRONGIN. I am not sure I understand the question because there is not a free lunch in that process.

Senator COBURN. Well, if, in fact, I can get half of one percent for my money in a CD and there is minimal price changes but high volatility on contracts for wheat and I can make money off the storage differential, can I not, in fact, markedly increase my yield versus the half-a-percent or quarter percent that I could get for my money somewhere else?

Mr. STRONGIN. So the index investor is only holding the investments while it is in futures and in no time takes advantage of the reduced storage costs.

Senator COBURN. So who makes the money off that?

Mr. STRONGIN. Well, the person who takes advantage of it is the person who needs wheat in the future and this way can store it below market cost and they are simply willing to pay for that. In other words, you can think about it almost like prepaying a discount card. If I can get below-market storage for a certain period of time, I am willing to pay up front for that below-market storage. So they are not actually going to make money. They are just paying money now. That is why the futures costs more than the cash because they get the right to store it at below-market rates after that.

Senator COBURN. OK. Does everybody at the table agree that there needs to be changes in the contract on wheat?

Mr. COYLE. I certainly do.

Senator COBURN. Mr. Cooper.

Mr. COOPER. I am—as I understand it, it will help, but it won't solve the problem.

Senator COBURN. What would solve the problem?

Mr. COOPER. I think more aggressive position limits, conflict of interest properly classifying traders, a whole series of steps are necessary to reform this and other commodity markets.

Senator COBURN. If you do all those things, won't this money go to an overseas market?

Mr. COOPER. Well, as Mr. Gensler pointed out, the United States is a big place and people want to be able to trade in U.S. instruments and U.S. markets. So there will be plenty of liquidity in this market. There is excess liquidity in a certain sense in this market, this huge influx of capital. So it is my belief that the United States

can, in fact, establish a set of rules that will make for an orderly market and plenty of traders will come here to preserve the liquidity of this market.

Senator COBURN. So you think there is minimal risk for us of losing capital in this country by making these changes?

Mr. COOPER. I think there is a minimal risk because of the commodities that people want to trade in. West Texas intermediate is a U.S. commodity designated for trade in U.S. markets, and as I understand it, foreign boards of trade desperately want to be able to trade that stuff. So if they refuse to conform to our statutes and they can't trade here, they will basically be unimportant. So this is a big place and I firmly believe that if we organize our markets, we won't be at a competitive disadvantage.

The interesting thing is that when you talk about London and Paris, those governments are looking very carefully at much more strict regulation than we actually are. If you look at the conversation, they are sort of pulling the Americans along. So it may well be that those markets are not going to be less regulated and therefore more attractive. I think the world is moving towards a much higher level of prudential regulation in all the major exchanges.

Senator COBURN. Mr. Strongin, your comments on that?

Mr. STRONGIN. Different activities have different mobility. In this case, you have a large number of non-U.S. investors who have easy access to non-U.S. futures contracts. That activity would exit the United States very easily.

I do not think it would imperil the functioning of our futures markets because we do have in truth large domestic individuals on both sides. But it would reduce the liquidity. It would shift—it could potentially source the center point of liquidity away from the U.S. markets in some cases. It is a cautionary tale, but German bonds now trade almost entirely out of London for similar reasons. So it is not automatic that the activity will be here. But the United States is an important enough market that it would continue to function afterwards.

Senator COBURN. But there is some risk?

Mr. STRONGIN. Of significant activity leaving.

Senator COBURN. Yes. OK. Mr. Coyle, you don't think that we ought to eliminate index trading on the Chicago Board, is that correct?

Mr. COYLE. At this time, that is correct.

Senator COBURN. Can you foresee a time when you would think that should be done and why?

Mr. COYLE. Well, I would say first, we would like to see the results of the current major changes in the Chicago Board of Trade's contract, allow them to come out with a next set of changes if they are necessary, and I would say a good percentage of people think that probably will be required to see if that can restore the balance and it converges as the market needs.

If by some chance that can't be done, then we don't rule out that something will need to be done, some other step. But I would question whether or not a change in the limits or the exemptions would actually solve the problem.

First, and it relates to a comment that was made earlier, the current limits of 6,500 contracts, that is \$162 million. Any individual

in this room could actually buy 8 percent of the U.S. wheat crop with the current limits. That is one comment.

Second, if capital really wants to deploy in commodities, then there are a lot of ways even within those limits that you can restructure your product so that you can find other ways to deploy that capital. It is certainly not as efficient as they can do it today in a futures market where the costs of execution are so cheap, you don't have counterparty risk, and so on. But it can be done.

And then there is the risk of the unintended consequences, I would say particularly if, in fact, this same capital decided that it wanted to pursue the physical market instead of the futures market. We would fix the convergence problem immediately because they would actually buy the physical bushels which they are not buying today. But if they did that, we would lose a lot of transparency that we enjoy today because we get to see those contracts.

My company has been contacted by two funds in the last month alone, looking for ways to now participate in the physical market. You can imagine if 195 percent of the equivalent of the crop is owned today in futures contracts, what would happen if they wanted to buy physical bushels? You would have the physical price go up, all right. The convergence problem would go away. You wouldn't know where it is at and we actually would have an inflation problem and millers, when they needed to buy the wheat, couldn't buy it.

Senator COBURN. Mr. Strongin, what do you attribute the tremendous increase in activity in index funds, especially as related to commodities? I know they are everywhere, but what do you attribute that to? Is that an increased sophistication of the American investor? Is that the American investor who is wanting to get hard commodities to hedge against the future? What is the overall reason why we are seeing this tremendous shift to index funds, away from specific assets?

Mr. STRONGIN. Part of it has to do with the way the word "fundamentals" has been used here. Fundamentals can apply to two very different things. One of them, which is the way it is normally used in this conversation, is today's cash market. How much supply, how much demand, what price balances at.

The second has to do with investment. Today when investors look at the global economy, when they look at the emergence of China, when they look at the emergence of India, when they look at what is going on in Latin America, they see incredible need to invest and they believe that they need prices that are high enough to drive that investment and they believe that commodity prices will rise and commodity industries will become more valuable.

And so across the board, whether it is in terms of investing in Brazil or investing in emerging markets in general, investing in oil companies or in hard commodities, you see investors trying to protect themselves from the pressures that will create. As you look at the necessary demand of the emerging market, you want to have exposure to basic commodities. You want to have exposure to energy. You want to have exposure to grains. You want to have exposure to all raw materials.

And they have increased their exposure to those things in all ways, whether it be through index participation or direct equity in-

vesting. You can see it in the percent of the S&P made up by commodity companies. You can see it in how the emerging markets are priced relative to the developed markets. People want that exposure because when they look at future demand and the need to invest, they see that as a key central element of a forward economy and forward fundamentals.

Senator COBURN. Right, and that is why we see China doing what they are doing.

Mr. STRONGIN. That is right. And to the point I made earlier, they are actually buying physical commodities and that has a lot more power to move prices than these futures do.

Senator COBURN. OK.

Mr. COOPER. Senator, could I try a slightly different answer? And I don't disagree with the fact that physical assets are important, I believe, in market fundamentals. But the other thing we have done is we have distorted the incentives in our country to over-reward short-term financial rewards and under-reward long-term investment in the real economy through a long series of policies that make it easier to make money by flipping things than by investing in hard physical assets, and I mentioned that in my testimony. It is really important that we rejigger those incentives so that you can make as much money with a real good investment in the real economy as you can by getting into short-term financial gains.

Senator COBURN. The difference there being is that if you are doing it in the short-term, you are going pay regular, ordinary income tax rates versus capital gains rates, which is a disincentive to flip—

Mr. COOPER. And we used to have taxes on short-term capital gains which—

Senator COBURN. We still do. They are at your ordinary income tax rate.

Mr. COOPER. And they were higher before and they were lowered and that has helped this shift.

Senator COBURN. I guess your testimony would be that we should raise taxes?

Mr. COOPER. I actually believe we should raise taxes to promote investment in the real economy, absolutely.

Senator LEVIN. Mr. Wands, who is representing the American Bakers Association, you have testified that contract limits need to be restored, I believe. Is that correct?

Mr. WANDS. Yes. Well, what we are asking for is that index funds be termed speculators and they fall under those type of contract limits.

Senator LEVIN. All right, and that there not be waivers or exemptions?

Mr. WANDS. Correct.

Senator LEVIN. And what is the effect of lack of convergence on bakers?

Mr. WANDS. Well, it is not—as Mr. Coyle commented, I think it is more significant on the production side, starting with the country elevator and then falling to the farmer. The lack of convergence on the bakery side, typically, we lock in our prices fairly well in advance so we don't have the ramifications that the production side does. One thing that can hurt us is if we lock in our basis, which

we can do from time to time, and the market rallies severely, as Mr. Coyle said, then the basis falls significantly and then we will be—if you chose to lock in your basis early, you will be at a significant disadvantage to, say, your competition who waited. So there is volatility for us in the basis depending on when we lock it in. But again, it is more on the production side and the producer side.

Senator LEVIN. But the volatility in the basis has had an effect on you. What is the cause for this huge fluctuation in the price of flour?

Mr. WANDS. Well, if you break down the price of flour, for the most part, when we look at our risks, about 70 percent of the defined risk, roughly about 70 percent of the risk that you can hedge either by buying basis or selling mill feed or buying futures price, 70 percent of it is related to futures. It is not an exact correlation, but as futures rise, that is going to reflect significantly on the flour price, more than the basis or the other ingredients in pricing flour.

Senator LEVIN. So the price of futures going up is what has that effect?

Mr. WANDS. Significant, yes.

Senator LEVIN. And we have shown the correlation between the huge influx of money from the index funds to the increase in the futures prices.

Mr. WANDS. Yes. That is correct. Somebody earlier asked about Kansas City. While the index funds do have a presence in Kansas City, it is significantly less than in Chicago, and you have to remember that while you are dealing with a 400 to 450 million bushel soft wheat crop, you are looking at a billion bushel hard wheat crop—hopefully bigger this year—so their presence in Kansas City, while it is there, is not nearly as significant as Chicago and you don't have the convergence problem in Kansas City.

Senator LEVIN. It is not nearly as significant as in Chicago—

Mr. WANDS. Correct.

Senator LEVIN. You are all set. Thank you very much. You have been a fine panel. We appreciate your presence.

We will now call on our third panel. Finally, we call on Charles Carey, Vice Chairman of the CME Group. Thank you for your patience, first of all, Mr. Carey.

The CME Group was formed by the recent merger of the Chicago Mercantile Exchange (CME), and the Chicago Board of Trade and the New York Mercantile Exchange.

Pursuant to Rule 6, all of our witnesses must be sworn, so we would ask you now to stand and raise your right hand.

Do you swear that the testimony that you will be giving will be the truth, the whole truth, and nothing but the truth, so help you, God?

Mr. CAREY. I do.

Senator COBURN. Mr. Chairman, I would like to just insert a comment into the record from our last panel. I got to thinking what the Consumer Federation of America said. He wanted to raise taxes to spur investment. I am not sure many people recognize that as a legitimate economic policy.

Senator LEVIN. OK, thank you.

Under our timing system today, Mr. Carey, we ask that you limit your oral testimony to 10 minutes, but your entire statement will be made part of the record. Please proceed.

**TESTIMONY OF CHARLES P. CAREY,<sup>1</sup> VICE CHAIRMAN, CME GROUP, CHICAGO, ILLINOIS**

Mr. CAREY. I am Charles P. Carey, Vice Chairman of the CME Group. Thank you, Chairman Levin and Ranking Member Coburn, for inviting us to testify today, respecting the June 24, 2009 staff report titled, "Excessive Speculation in the Wheat Market."

I was Chairman of the Chicago Board of Trade, the home of the soft red winter wheat market, prior to the merger that created CME Group. I trade wheat, corn, and other agricultural products and I am the point person on the Board of Directors for dealing with the grain markets. I deal with the concerns respecting the impact of index traders on our markets expressed by our members and the agriculture industry and have been directly involved in the Chicago Board of Trade's ongoing efforts to modify the wheat contract to assure better convergence.

As you are aware, some of our commercial customers believe that index trading may be having unwarranted impacts on our wheat market. We responded to these concerns by arranging for an independent analysis of this thesis across grain markets. We also cooperated with the others conducting such studies and we analyzed all the studies of this subject that preceded the report prepared by this Subcommittee.

None of the relevant studies that we dealt with supported the conclusion that index traders or swap dealer participation in our markets was the cause of volatility, high commodity prices, or lack of convergence. Indeed, in our corn and soybean markets, there have been no significant convergence issues even though there is substantial participation in those markets by index traders and swap dealers. Despite the clear conclusions of these independent professional studies and our own experience in other grain markets, the concerns remain.

Those who are not professional statisticians or economists continue to focus on the confluence of unexplained price behavior in the large share of open interests held by non-commercial participants. It is difficult to ignore that coincidence and some of our traders and customers assumed that there was a strong chance that the two were connected. Professional economists and statisticians explained to us, however, that it was necessary to show causation, not just coincidence, and that it is a common logical error to attribute cause based only on correlation.

Many had hoped that this Subcommittee study and report would add new evidence and clarify the relationship between index trading and the lack of convergence or any other unexplained price effect. The Chicago Board of Trade is absolutely committed to solving the convergence problem. Like you, we would have been pleased if the report had provided a simple explanation and easily deployed solution. Unfortunately, economists and the informed critical response to the report tell us that it does not explain the lack of con-

<sup>1</sup> The prepared statement of Mr. Carey appears in the Appendix on page 143.

vergence and that its proposed solutions are more likely to be harmful to the functioning of our markets than helpful.

You asked us to answer five questions and to discuss the Subcommittee's recent staff report, "Excessive Speculation in the Wheat Market." My written testimony provides extensive, well documented and reliable answers to those questions. I don't intend to use this limited time to restate those answers. Instead, I want to focus on our efforts to deal with the likely causes of the lack of convergence between futures prices for soft red winter wheat and the reported bid prices for that commodity.

In our efforts to eliminate this divergence, we share a common goal with the Subcommittee. We differ only on how to get there. We absolutely agree with the Subcommittee's concern that the lack of convergence impairs the value of our market and it needs to be corrected. We share the concern of knowledgeable economists who have examined this market and who have carefully reviewed the Subcommittee's report that the evidence produced in support of the conclusion that index traders are the principal cause of the lack of convergence and persistent contango has not been validated by any of the statistical measures that are accepted by experts in the field. Our analysis of some of the report's conclusions is included in my written testimony.

In particular, we are concerned with the measure of cash price used to calculate the value of the cash and futures converge. Neither the price of the actual transactions nor the midpoint of actual purchases and sales was used. Instead, the report used a national average price as represented by the MGEX-DTN soft red winter wheat index as the cash market price. Basis was then calculated as a futures price minus the MGEX software index price. At best, this number represents the price at which some elevators, most outside the delivery area, claim they were prepared to purchase during a relevant period.

The choice of this measure does not reflect true delivery market economics. Economists and traders expect futures prices to converge to the price of the cheapest to deliver based on location and grade. There is no theory supporting the implicit claim that futures prices will converge to the average hypothetical offer prices in multiple locations.

We are concerned that the report's focus of blame on index traders and speculators directs attention away from appropriate efforts to identify any structural problems with the contract specification and impairs our ongoing efforts to cure the problem by fixing those terms. Assigning responsibility for the convergence problem to the wrong cause will only delay its solution and may result in greater problems.

The Chicago Board of Trade has implemented very significant changes to the delivery specifications of the soft red wheat contract. We have acted in accordance with our obligations under the CEA respecting the timing of changes to enumerated futures contracts with open interests and have attempted to take account of the suggestions of all segments of the industry to whom this contract is important. We have also implemented the changes in an orderly fashion so that we will have sufficient time to judge their effective-

ness and so that we do not in haste overshoot the market and risk damaging the liquidity on which the market users depend.

We have authorized a wide-ranging addition of delivery points and facilities. We had 58 new locations for delivery that will provide an additional 90 million bushels of capacity on the Ohio and Mississippi Rivers and in a 12-county area of Northwest Ohio. We expect that this will relieve any congestion issues that prevented arbitrage from driving the convergence within historic ranges and better align our delivery locations with the primary flow of soft red winter wheat in the domestic cash market into the New Orleans Gulf for export. Similar changes made to the corn and soybean contracts in 2000 greatly enhanced the performance of these contracts and we expect similar results from these changes in the wheat contract. We have also implemented seasonal storage rate adjustments that are intended to incent shorts who want deliverable wheat or who can acquire deliverable wheat to make delivery when the basis moves to unjustifiable differentials.

The higher futures storage rate during the July-December period reflects the higher seasonal storage rates in the cash market when wheat that has just been harvested competes with the upcoming corn and soybean harvests for storage space and will allow wider carrying charges, if needed, throughout the country elevator system for producers with on-farm storage. The higher futures storage charges will also encourage buyers who stand for delivery and must pay the storage rate to the seller to either load out or redeliver the wheat, both of which will enhance convergence.

On September 1, a reduced level of allowable vomitoxin will be implemented which will convert the contract from a feed-grade wheat contract to a human consumption grade. We expect that this change will have a positive impact on convergence for the following reasons. The estimated cash market discount for wheat with four parts per million of vomitoxin is 12 cents per bushel and that differential will be applied to four parts per million wheat delivered against futures contracts. Par delivery will require no more than three parts per million of vomitoxin, which is expected to improve the cash futures relationship by 12 cents per bushel.

The second reason is the industry standard for vomitoxin in the domestic milling and export markets is two parts per million, and we will implement this level in delivery specifications for the futures contract in September 2011, with three parts per million remaining deliverable at a 12-cent—actually, it is a 12-cent discount, at four parts per million, a 24-cent discount. This final change in the quality specifications for the wheat contract will align our par quality specifications with industry standards while providing the flexibility to deliver lower-quality wheat at a significant discount when higher quality is not available.

It is possible that we will see some significant improvement in contract performance by mid-September and certainly by the end of the year. The basis has already strengthened. It was \$2 last year, and as we have seen, the charts have gotten better, and as we checked it today, it was somewhere around 80 under, so—

If the results fail to meet our expectations, we have additional modifications at the ready and are prepared to continue to modify the contract or to introduce a new contract to provide a safe and



effective environment to permit producers and users to hedge their needs and to provide effective price discovery to the remainder of the market. We respectfully suggest that this is a more reasoned approach than the one that discourages market participation with the attendant risk of damage to market liquidity.

We are committed to dealing effectively with the lack of convergence by attacking the structural problems regarding specifications in delivery. In this regard, we are aligned with the report's recommendations. We do not, however, believe that restrictions on index traders beyond those that we already impose are anything but a distraction from our efforts.

Thank you very much.

Senator LEVIN. Thank you very much, Mr. Carey.

Exhibit 1,<sup>1</sup> which has been put up, and I think it is in your book, if we could put that up again, tracks the number of wheat futures contracts purchased by commodity index traders from 2004 to 2009. We obtained this data from the CFTC on index trading in the wheat market. It shows that commodity index traders have dramatically increased their purchase of wheat futures from 30,000 contracts in 2004 to 220,000 in 2009. You have indicated in your prepared statement that from 2006 to the present, the percentage of long open interests held by commodity index traders fluctuated between 51 percent in January 2006, to 32 percent in October 2006. The most recent data for July indicates the percentage to be 46 percent.

So I am correct, I believe, that you agree as a factual matter that since 2006, commodity index traders have typically held almost half of the outstanding wheat futures contracts on the Chicago Exchange, is that correct?

Mr. CAREY. Yes, sir.

Senator LEVIN. Would you also agree that prior to 2004, commodity index trading was not a big factor on the Chicago wheat futures exchange?

Mr. CAREY. Commodity index trading?

Senator LEVIN. Yes, in the Chicago wheat futures prior to 2004.

Mr. CAREY. It has experienced tremendous growth. We didn't have numbers prior to 2006, but according to these numbers, yes.

Senator LEVIN. So you would agree that it was not a big factor prior to 2004?

Mr. CAREY. But it existed. To what extent, I don't have the numbers.

Senator LEVIN. Do you believe that it was a big factor prior to 2004?

Mr. CAREY. No. I would expect that this chart is pretty accurate.

Senator LEVIN. All right. Now, Exhibit 3<sup>2</sup> is a chart showing the basis or the gap between the futures and the cash prices for wheat on the expiration date for each of the five wheat contracts that were traded on the Chicago Exchange from 2005 to 2008. We obtained the final futures prices on the last day of each contract, then went to data compiled by the U.S. Department of Agriculture showing what the cash price was on that day in Chicago. The U.S. De-

<sup>1</sup> See Exhibit No. 1, which appears in the Appendix on page 425.

<sup>2</sup> See Exhibit No. 3, which appears in the Appendix on page 427.

partment of Agriculture obtained its cash prices by asking elevators in the Chicago area to report their bids to buy wheat on that day. It then produced a daily price report which is available on its website.

Would you agree that this data shows a significant jump in the basis since 2006?

Mr. CAREY. Absolutely. Yes. There has been a lack of convergence, which is what we are trying to tackle right now.

Senator LEVIN. Right. So you would agree that the basis, the price gap, is larger than has been historically the case, is that correct?

Mr. CAREY. Yes, sir.

Senator LEVIN. Now, were there changes in the contract that were made between 2004 and 2009?

Mr. CAREY. Well, recent vomitoxin changes. I can't remember the first time we went from five to four, but now we are going from four to three. But most of the changes have just taken place in the most recent July contract, sir.

Senator LEVIN. And yet we see this major change in the basis while the same contract was in effect, is that correct?

Mr. CAREY. Yes, sir.

Senator LEVIN. So it can't be that the contract is the problem, or can it be?

Mr. CAREY. Well, it could be.

Senator LEVIN. You say no expert says, for instance, that the increase in investment by index traders is the cause of the lack of convergence. You said no expert says that.

Mr. CAREY. According to the reports that we had, that might have been a factor. But the reports—

Senator LEVIN. It might have been a factor?

Mr. CAREY. Some part of it. I think there were other factors, too, as we recognize.

Senator LEVIN. How big a factor is it?

Mr. CAREY. I would leave that to the experts, and they didn't—

Senator LEVIN. Well, we had three experts here today. We had one who was the head of the Commodity Futures Trading Commission. He said it is a factor. We then had the elevator operators representative here, Mr. Coyle, who said it is probably the principal, almost the exclusive factor. I would think he is an expert. He knows firsthand. Mr. Wands, of American Bakers, says that it was a significant factor in the lack of convergence. Are they not experts? They are out there every day in that area of work, are they not?

Mr. CAREY. They have an opinion.

Senator LEVIN. Is it an expert opinion?

Mr. CAREY. From where they stand.

Senator LEVIN. And they say that index trading is either exclusively or significantly a cause, or in the case of Mr. Gensler, a cause in the lack of convergence. And would you agree with any of those experts?

Mr. CAREY. Would I agree with them? Not exclusively. We all have our own opinion. I would say that we have a global benchmark and a correlation of 92 to 96 percent to world wheat prices and that is why we are tackling the design issues, sir. And I think

that they have the opinion that this is the cause, the sole cause. I believe that there are a fair amount of causes to create this lack of convergence.

Half of the conversation I heard today revolved around volatility versus lack of convergence. So there were a lot of issues being discussed and debated here, but this is a cause and I would agree with Mr. Gensler. It is a cause, but it is not exclusive.

Senator LEVIN. Well, the only one who said it was exclusive, and that was the first time he testified, the first time around, was Mr. Coyle, and then he said a principal cause. I don't think anyone ended up saying it is an exclusive cause. Is it a significant cause, and if it is a significant cause, it seems to me something has got to be done about it. We have either got to get position limits back on, or we have to do something which addresses that part of the cause.

Now, if the contract is part of the cause, you will find out pretty soon, won't you?

Mr. CAREY. Yes, sir——

Senator LEVIN. By when?

Mr. CAREY. Well, we heard Mr. Coyle, who is more involved in the cash grain market on a daily basis than I am, but he said that he would give it a couple of delivery cycles, and the vomitoxin change is September, and he said that he would hope within this cycle. And I think we are working hand-in-hand with him. We have a similar interest. Convergence is key and providing contracts that work is key. I think we also share the same opinion that just limiting participation without examining the problem and fixing the problem. If that is the sole problem, fine. But we want to remain a problem as the global benchmark for commodity trading and we want this convergence issue to be handled properly.

Senator LEVIN. Well, I am glad to hear you acknowledge at least that it is a contributing factor. That is more than we got out of your printed testimony. Where in your printed testimony does it say it is a contributing factor to the lack of convergence?

Mr. CAREY. I don't believe it says that in there.

[Pause.]

Senator LEVIN. You said you should know whether any changes in the contract have a significant effect on the convergence issue and that would be two cycles, is that what you said?

Mr. CAREY. Well, we are coming up to one more change in September, sir, and we hope to get through. I would echo Mr. Coyle's remarks that we need to go through a couple of delivery cycles, whether it is December or whether it is March delivery. By that time, we should know whether or not this convergence is going to take place with these changes or if additional changes need to be put in. I believe that our staff is working with the Commission and with the industry to come up with a solution that does place convergence at the forefront of our changes.

Senator LEVIN. Thank you very much. I will be right back.

Mr. CAREY. Thank you.

Senator COBURN [presiding]. Well, thank you for your testimony. You all do want the convergence problem fixed?

Mr. CAREY. Absolutely.

Senator COBURN. It is not really good for your business in the long term, is it?

Mr. CAREY. That is correct, Senator.

Senator COBURN. It is not good for you as a market, either, is it?

Mr. CAREY. That is correct, Senator.

Senator COBURN. So people are going to start loading out of CME to somewhere else in the world if it is not fixed?

Mr. CAREY. Yes, they will find another place. I think I disagree with ideas in some of the testimony that took place, that money can't move offshore or to different marketplaces. Today, the Dalian Exchange in China trades more volume than the Chicago Board of Trade soybean, meal, or oil contract. Today, there is a wheat contract in France. I know that there has been rhetoric that says they are going to suppress this excess speculation, but I will tell you to look at what is going on in the world. There was an article Monday morning that oil trading is growing in London, where it doesn't agree necessarily with what we are hearing. So yes, I think that we have to recognize that we live in a global environment.

Senator COBURN. And do you agree with the gentleman from Goldman Sachs that people are looking to invest in assets that are hedging for their future and that one of the things they invest in is commodities, both hard and soft commodities? Do you agree with that?

Mr. CAREY. Clearly. These swaps dealers exemptions, most of them aren't speculators. Most of them are investors.

Senator COBURN. OK. I am going to ask you a question as if I were a purist. If we have commodity markets, we have producers and we have end users, but those markets never really function very well unless you have a certain amount of speculators in there to help create the market, is that correct?

Mr. CAREY. That is true.

Senator COBURN. There is no question, and you would agree, I believe, that we have had a marked increase in activity in speculation, either through index funds or some other way, on these commodities?

Mr. CAREY. We have had an increase in interest. We have had some extreme volatility, and we have had some very unusual situations that I think were a big part of the cause of this volatility, whether it is the ethanol you cited or whether these investors are coming into this area for a reason.

Senator COBURN. Right. And so the gentleman from Goldman Sachs said he didn't think position limits would solve the problem for a couple of reasons, and extrapolating from what he said, do you agree that there will be just more firms with smaller positions that will do more of that that ultimately might have more damage to the market, as he testified?

Mr. CAREY. Yes, they could. The fact of the matter is, I am more concerned about exporting a business that we have here in the United States than I am about how people are going to try to access these markets.

Senator COBURN. But if they can't access your market, then you are not going to be able to export that business.

Mr. CAREY. No, what I am saying is that somebody takes the business offshore—

Senator COBURN. Yes.

Mr. CAREY [continuing]. Or into a dark pool of liquidity, because investors will seek the marketplace and that asset class in a different way.

Senator COBURN. The profitability—and I want to be fair in this hearing and I think the Chairman will agree—there is no question you have a financial interest in increased trading on your exchange, correct?

Mr. CAREY. Yes, but we also know that if there is no integrity in our contracts, that people will leave. But yes, clearly, we get paid fees per contract.

Senator COBURN. So if we eliminated tomorrow all index trading on your exchange, that would have a significant financial impact on CME Group?

Mr. CAREY. Yes. Clearly, it could have some impact.

Senator COBURN. I want to go back to this idea of convergence. I believe it is multifaceted and I believe index does have something to do with it. Tell me what you think are the factors that you have identified, as consistent with your testimony and anything else, that you think are the factors that have led to this lack of convergence. What do you think is going on? I mean, just flat out, what are all the variables that you all see, and after you tell me those, what do you see as the answer to fixing that? I know we have talked about the timing of getting some of these changes through, modifying the contract, but what do you see as the factors that are influencing this lack of convergence?

Mr. CAREY. Well, I think that it was identified here by both Mr. Gensler and Mr. Coyle, in that it is a 400-million-bushel crop this year. It was 600 million bushels last year. Yet people come here because it is the global benchmark and it is where the liquidity is and so people want to trade it. And so we correlate more to a world price than we do to a Toledo or Chicago price, and so this is what is causing some problems in the marketplace and we have to find a way to bring convergence. But we are a financial services company and we want to be able to offer these products to the world. We want to remain the global benchmarks for grain trade.

Senator COBURN. So one of the problems, you think, is because you are trying to—

Mr. CAREY. It is contract design, sir, and deliveries and these are the things that we are addressing.

Senator COBURN. And you told the Chairman that you think that index does have some influence on it?

Mr. CAREY. Yes, obviously, we have—

Senator COBURN. So we have contract design and index trading. What else?

Mr. CAREY. Well, I think you had a period of tremendous volatility caused by factors, not just by speculation, but by world factors. The fact that last year, the wheat stocks in the world were the lowest since 1947, with the Marshall Plan. They were 60-year lows, and that is when President Truman was pretty angry about trading in wheat futures. So I think that and the ethanol pulling acres out of wheat production, I think we suddenly ran into the worst planting conditions last spring on top of energy prices, and we don't control our destiny when it comes to energy prices in this

country, so that while there can be short-term surpluses and we look at these reserves, the world knows that we don't produce enough oil to support our demand over time.

So there are a lot of factors that would lead people into investing, but overall, there is still a fair amount of open interest in these contracts by these investors that we are talking about, and yet the markets have come down dramatically. So I think the markets are trying to work.

Senator COBURN. Well, I would add a fifth factor. One of the reasons people were investing there is fear of not getting a return in other investment vehicles.

Mr. CAREY. Absolutely.

Senator COBURN. So we listed five, fear of not getting a return, ethanol and the shift in plantable acres, decreased worldwide reserves, index trading, and contract design. So are you all looking at the things that you can have a play on, the things that you can influence, do you have a plan, a design so that you address the ones that you can address?

Mr. CAREY. We do, and we are meeting with the Commission and we are meeting with the industry and it goes back over a year. When we went to \$12 or \$13 a bushel in Chicago and farmers couldn't sell, part of it was the banking crisis at the time. It was a strain that nobody had anticipated—

Senator COBURN. And the elevators couldn't borrow money to buy wheat.

Mr. CAREY. That is right, and suddenly the only place people could go was to the futures market, and so they went to the futures market. And so it took some time for this to settle down. But the market has converged. It has come back dramatically and we hope the changes will have it converge even better so that these kinds of problems don't exist for these short hedges, because there was—

Senator COBURN. Well, I was just going to point to that chart. We are now—I think the end one on the last contract there was what, \$1.20?

Mr. CAREY. It could be. It was a little bit—yes, it is between—

Senator COBURN. And we are now, 80 cents?

Mr. CAREY. Yes, somewhere between 80 and a dollar.

Senator COBURN. What would you expect the convergence to be after these next two contracts close?

Mr. CAREY. I would hope it would be well under 50 cents or 40 cents. You have to take into account that prices are higher, the dollar is lower. All these things have taken place since these charts were first drawn.

Senator COBURN. But that is still historically very high, you agree?

Mr. CAREY. It is high, but the price went up because of the other problems. The fact that it is fulfilling, I think whoever said that should look at the price of grains today, and look at the price of corn today, because it is not a self-fulfilling investment. It just is not.

Senator COBURN. All right. Mr. Chairman, thank you. I appreciate this hearing.

Senator LEVIN [presiding]. Thank you very much, Dr. Coburn.

Let me close by thanking, first of all, our last witness. Mr. Carey, thank you for coming.

We obviously have identified a problem here that the amount of index trading has created volatility, has contributed, many think in a major way, but has contributed, I think, by consensus to the lack of price convergence. That has had a very negative effect on a whole host of people. It doesn't have to be that way.

The CFTC has told us they are going to review these exemptions and waivers to see if they should be eliminated, and we look forward to that. That is going to happen hopefully in the next few months. Also in the next few months, you are going to redesign or continue to redesign your contract, Mr. Carey. We are going to see what kind of effect that has.

And then there is the financial reform bill which is in Congress to regulate over-the-counter and derivative dealers, and that all is going to come into play in the fall, as well. So a lot of things are going to converge. There may not be price convergence in your wheat market, but there is going to be convergence of a lot of factors in the fall.

We may have additional questions for our witnesses, so we will keep the record open for 10 days.

We very much appreciate the cooperation of all of our witnesses and the hearing is adjourned.

[Whereupon, at 5:49 p.m., the Subcommittee was adjourned.]





## A P P E N D I X

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### PREPARED STATEMENT OF SENATOR MCCASKILL

I want to first thank the Subcommittee for their truly comprehensive investigation and leadership on this issue. This report hits home. For over the past year I have received numerous calls from farmers across Missouri who are seeing their livelihoods fade. Now volatility is nothing new in Ag markets, and frankly investment interest in the wheat markets does help to provide price discovery. But from 2007 to 2008 the average daily basis for wheat traded on the Kansas City Board of Trade rose by 51 cents per bushel. During 2008, the maximum basis reached to about 90 cents. The market just doesn't seem to be working and as the gap between futures and cash prices widens, the chances for our farmers to get a fair shake quickly declines. In this economy, price convergence is essential.

My farmers are telling me that right now the price is holding at \$5.42 a bushel—the grain elevator takes \$1.20 and minus the cost of seed, fertilizer, rent, etc., they're losing about \$50 per acre. Multiply that by 3,000 acres or so and that's a lot of money. The negative basis was much higher this time last year—as much as \$ 2.29. What it boils down to is that this money comes out of the pocket of the farmer. It's been likened to just giving away a third of your crop.

As long as the negative basis keeps increasing, so does a farmer's ability to turn a profit. Ultimately, if the vicious cycle continues, farmers are saying they just won't plant as much wheat. That's clearly not a solution any of us are looking for.

I know I don't have to remind my colleagues it's not just a Missouri issue. Price convergence is critical for farmers to stop treading water everywhere.

I implore the CFTC to work with the relevant exchanges and find sensible ways to establish convergence in the market. Missouri farmers need help and they need it quickly. With escalating input prices and the extreme volatility in these markets our farmers must have a quick solution.

Thank you again for the Subcommittee's work. I'll be interested in hearing from the panels on how we can come to a compromise to restore natural order to these markets.

**TESTIMONY OF CHAIRMAN GARY GENSLER**  
**COMMODITY FUTURES TRADING COMMISSION**  
**BEFORE THE**  
**U.S. SENATE PERMANENT SUBCOMMITTEE ON INVESTIGATIONS**  
**JULY 21, 2008**

Chairman Levin, Ranking Member Coburn, Members of the Subcommittee, thank you for the invitation to testify before the Permanent Subcommittee on Investigations regarding the wheat market.

This Subcommittee's report, *Excessive Speculation in the Wheat Market*, is a timely and significant contribution to discussions regarding the potential effects of index trading in the wheat market and other commodity futures markets. As the Commission continues our own analysis and appropriate regulatory responses, the report's recommendations will be carefully considered.

The continued lack of convergence in important segments of the wheat market has significantly diminished the usefulness of the wheat futures market for commercial hedgers. The reduced ability of these firms to hedge their price risks increases the cost of doing business. Ultimately, it is the American consumer who will bear the burden of these increased costs. Core to the Commodity Futures Trading Commission's (CFTC) mission is to ensure fair and orderly markets that enable commodity users to discover and hedge price risks. At the heart of this is the convergence of cash and futures prices. My firm belief is that we must aggressively use all existing authorities to fulfill this mission.

My testimony today will cover four areas:

- First, a review of the conditions in the wheat futures market;
- Second, some key regulatory initiatives the CFTC is undertaking within our current authorities;
- Third, a brief discussion of the need for broad regulation of the over-the counter (OTC) derivatives markets; and
- Fourth, specific responses to the Subcommittee's recommendations.

### **The Wheat Futures Market**

I would like to start with a review of the lack of convergence in the wheat futures market. I also will touch upon possible factors leading to this lack of convergence and recent steps taken by the futures exchanges to try and address the problem.

**Lack of Convergence.** Hedging in the futures markets only works to the extent that the price of the commodity in the cash market and the price of the commodity in the futures market converge as a futures contract expires. If the cash and futures prices do not come together in a predictable manner upon expiration of the futures contract, then the effectiveness of the hedge is significantly reduced.

As this Subcommittee's report documents, over the past several years, the futures price and the cash price for soft red winter wheat have often failed to reach convergence. The average difference between the Chicago Board of Trade (CBOT) wheat futures price at contract expiration and Toledo cash wheat prices rose from an average of about 5 cents per bushel in 2005 to 47 cents in 2006, narrowed to 24 cents in 2007, but widened again appreciably to \$1.07 in 2008.

So far this year, the average difference between the cash and futures prices at contract expiration has improved modestly. Contract changes designed by the Chicago Board of Trade (CBOT) to address convergence began with this July's contract. Even so, the final July Toledo difference was still 83 cents. This continued lack of convergence is unacceptable. Several market participants have stated that the problem is so severe that they could not use the CBOT wheat futures contract for hedging and they have preferred to bear whatever risks the cash market presented.

**Possible Factors Contributing to Lack of Convergence.** Many factors are cited as having contributed to the lack convergence in the soft winter wheat markets, ranging from contract design, changing market conditions, to natural disasters such as flooding. I would like to focus on three factors believed by many market participants to be involved. First, the relative sizes and scale of the participants in the wheat market. Secondly, the design of the wheat futures contract. Third, the large "carry," or additional price paid for successive futures contracts. There is much debate and controversy about the importance of each of these factors. Amongst market participants and observers, there is not even agreement as to whether each of these factors constitutes a cause or an effect of the convergence problem.

**Factor # 1: The relative sizes and scale of market participants.** The soft red winter wheat futures market is one of three wheat futures markets in the United States. Hard red winter wheat futures contracts are traded on the Kansas City Board of Trade and hard red spring wheat futures contracts are traded on the Minneapolis Grain Exchange. Although it is the smallest of the three major wheat crops, constituting only about 20% of total U.S. wheat production, the CBOT's soft red winter wheat futures contract is the primary futures contract used to hedge wheat in the U.S. and globally. US soft red winter wheat, with a \$1.4 billion annual crop, constitutes just 2 % of global wheat production over the last several years. Despite its relatively

small production base, the total open interest in the CBOT wheat contract is typically several times larger than the open interest for wheat contracts on the other exchanges.

Because the CBOT contract is so widely used, it is considered the global benchmark for the price of wheat. For this reason, many of the commodity indexes have chosen to peg their indexes to the value of the CBOT contract. Investors in these indexes now constitute a particularly large share of the wheat market. Over the past five years index traders have represented between 30 and 55 percent of the total long open interest in the CBOT wheat futures market.

As a result, the CBOT wheat futures contract must shoulder a large amount of index trading relative to the actual amount of the commodity produced and traded under the contract. For example, in mid-2008 commodity index traders held futures contracts representing the purchase of approximately 1 billion bushels of wheat. The size of the entire US soft red winter wheat crop for 2007-08 was about 360 million bushels. Thus, index investors, through futures contracts, were invested in the equivalent of three years of production of soft red winter wheat.

There are large amounts of index trading in other commodity futures markets as well. Yet, in these other markets, the index investments may not have been as large in relation to annual commodity production and hedging. These other markets, though experiencing challenges, have not experienced the same extent of convergence problems as the wheat futures market.

**Factor #2: Contract design.** Second, the limited capacity for delivery of wheat under the CBOT contract may have contributed to the lack of convergence. As with other commodity futures contracts only facilities in specific locations and approved by the CBOT may make delivery under the wheat futures contract. This restriction has been considered necessary for grain and other physical commodity futures contracts to ensure that persons committed to making delivery under a contract actually have the ability to do so. Until recently, there were only two warehouses in Chicago, six in Toledo, and three in St. Louis that were approved to make delivery under the CBOT wheat futures contract. These warehouses are operated by five firms, and as wheat merchandising shifted, became less centrally located to the cash market for soft red winter wheat.

Further contributing to the delivery constraints is that there is no mechanism to force the holders of shipping certificates for grain to redeem them for physical grain. As long as it is profitable for warehouses and holders of shipping certificates to keep the grain off the market rather than place it into the stream of commerce they will do so, and convergence will be harmed.

**Factor #3: Large carry.** The price spreads between futures contracts in the CBOT wheat market (i.e., the “carry”) have been large. This phenomenon, usually associated with ample physical supplies, has prevailed since last summer’s harvest. As a result, it has been profitable for traders to keep grain in storage, as prices for out dated futures are greater than near dated futures. When the carry is equal to the full cost of financing, insurance, and storage, it is said that a market is in “full carry”. Periods of full carry can expose weaknesses in the delivery

mechanism of a contract. Traders seeking to take advantage of full carry markets can, at times, overwhelm the capacity of grain delivery facilities. Grain delivery operators normally try to engage in arbitrage transactions between the cash and futures markets that helps bring about convergence. Over the past few years, the lack of convergence has been most pronounced when the carry has been large. Convergence has occurred when the carry has been small. Observers are divided about whether the large carry has been a cause of the lack of convergence, or a symptom of it.

**Recent Changes to Contract.** The Chicago Mercantile Exchange (CME) has recently implemented several changes in the wheat futures contract in an effort to improve convergence for the CBOT wheat contract. Several other measures have been discussed as well. The Commission is monitoring the CBOT wheat contract to determine whether the changes to date have been effective, and we are considering what additional measures should be adopted. In addition, the CFTC's Agriculture Advisory Committee and its Subcommittee on Convergence is examining the convergence problem and monitoring the performance of the contract. They will provide recommendations to the Commission as to the effectiveness of the recent changes and whether additional measures should be adopted.

In December 2008, the Commission approved rule changes to the CBOT soft red wheat contract that added several new delivery points. Beginning with the July 2009 contract, total delivery capacity has more than doubled to 167 million bushels of wheat (equivalent to more than 33,000 futures contracts). Eleven firms are now eligible to participate in the delivery process, with additional delivery locations in Northwest Ohio and along the Ohio and Missouri rivers.

The CBOT also has increased the storage fees applicable to delivery certificates for the wheat futures contract, on a seasonal basis. Raising the cost of storage lessens the financial incentive for traders to take delivery under a future contract, and should help convergence. A third rule change, effective for the September 2009 contract, reduces the amount of vomitoxin (a grain toxin) permissible in wheat delivered under the contract. This change will increase the conformance of the futures contract to commercial standards, thereby improving the consistency between the grain in the cash market and that which is deliverable under the futures contract.

With these changes, however, we saw only small numbers of deliveries at the new locations and still a significant lack of convergence as the July contract expired. We will watch closely for the full effects of the changes in the September delivery period.

**Other Possible Contract Changes.** A variety of other recommendations have been made by market participants. These include:

- Changing the primary delivery location of the contract to the Gulf of Mexico;
- "Compelled load-out," which could require persons holding shipping certificates to redeem them for physical grain; and
- Adding a new contract which is "cash-settled."

The Gulf of Mexico has been suggested as the primary futures delivery location because the majority (70%) of wheat exports leave the U.S. from the Gulf of Mexico. Much of the wheat in the cash market is priced in relation to the price of wheat exported from the Gulf.

Compelled load out would force traders to promptly put wheat delivered under a futures contract into the cash market. Proponents of this measure believe it would reduce the financial incentives to stand for delivery and would likely improve convergence

Under cash-settlement, physical delivery of the commodity is neither required nor an option at contract expiration. Instead, the final settlement of the futures contract is determined by taking an average of many cash prices at many locations, possibly over more than a single day. Although there are many examples of successful cash-settled contracts in financial products, some in physical commodities, and a few in agricultural products, many market participants have expressed reluctance to trading a cash-settled wheat futures contract because of difficulties related to unique aspects of the physical wheat markets. However, because cash settlement would eliminate the convergence problem, I have asked the CME to consider whether cash settlement may be a feasible answer to convergence problems in the wheat market.

#### **CFTC Initiatives**

Upon becoming the Chairman of the CFTC, I instructed Commission staff to present all available regulatory options to carry out our duties and fulfill our mission. My firm belief is that we must aggressively use all existing authorities to ensure market integrity and efficiency.

**Position limits.** As part of this effort, the Commission will be holding public hearings to examine the imposition of Federal position limits in futures markets for physical commodities, in particular energy commodities. The Commodity Exchange Act (CEA) states that the CFTC shall impose limits on trading and positions as necessary to eliminate, diminish, or prevent the undue burdens on interstate commerce that may result from excessive speculation. The CFTC currently sets, and ensures adherence to, position limits with respect to certain agriculture products. This is not the case for energy markets. This difference in regulatory approach deserves thoughtful review.

The CEA provides for exemptions from position limits for “bona fide hedging transactions or positions.” The CFTC is currently reviewing the manner in which these exemptions have been implemented. Our hearings, starting July 28, will further inform the Commission as to on whether the “bona fide” hedge exemption should continue to apply to persons using the futures markets to hedge risks other than risks arising from the actual use of a commodity.

**Improving Transparency.** The Commission also has announced initiatives to improve the transparency of our markets. We will be providing additional data in our weekly Commitment of Traders (COT) reports.

We will create new categories of traders in the COT report to reflect the aggregate positions of swap dealers and of professionally managed market positions, such as hedge funds. Also, for the first time we will be including in our COT reports data from both the ICE Futures

Europe exchange in London and on contracts determined to perform a significant price discovery function under the provisions in the 2008 Farm Bill.

In addition, the Commission, through our special call authority, will continue to collect and report data from swaps dealers and index investors. Last September, the CFTC published a Report on Swap Dealers and Index Traders. The CFTC will improve the quality of the data included in the report, and release aggregate data on commodity index investment on a quarterly basis. We hope to eventually be able to provide this data on a monthly basis. We look forward to public comment on these recent transparency initiatives.

#### **Regulation of OTC Derivatives Market**

I believe Congress should enact broad reforms to regulate the over-the-counter (OTC) derivative markets. Such reforms must comprehensively regulate both derivatives dealers and the markets in which derivatives trade.

The current financial crisis has taught us that the derivatives trading of a single firm can threaten the entire financial system and that all such firms should be subject to robust Federal regulation. It is only by fully regulating the institutions that trade or hold themselves out to the public as derivatives dealers that we can effectively oversee derivatives markets. Derivatives dealers should be subject to capital requirements, robust margining requirements, business conduct rules, and reporting and recordkeeping requirements.

Additional safety and transparency should be provided by regulating the derivative market functions as well. We should require that all derivatives that can be moved into central clearing be required to be cleared through regulated central clearing houses and brought onto regulated exchanges or regulated transparent electronic trading systems.

Critical to this reform is for the CFTC to have the ability to impose position limits, including aggregate limits, on all persons trading OTC derivatives that perform or affect a significant price discovery function with respect to regulated markets that the CFTC oversees. Such position limit authority should clearly empower the CFTC to establish aggregate position limits across markets in order to ensure that traders are not able to avoid position limits in a market by moving to a related exchange or market, including international markets.

The CFTC has been working closely with the Treasury Department, the Securities and Exchange Commission, and other Federal agencies on developing draft legislation to achieve these goals. I look forward to continuing to work with the Congress as it considers these proposals.

### **Response to PSI Recommendations**

I would like to now turn to the specific recommendations of the Subcommittee for improving the performance of the wheat market and other commodity markets.

#### **Recommendation #1: Phase out existing wheat waivers for index traders.**

The Subcommittee's wheat report found that index traders were one of the primary causes for the large price spreads that inhibited convergence. CFTC regulations currently limit speculative traders to 5,000 wheat futures contracts in any one month, and 6,500 wheat contracts for all months combined. The CFTC has granted a number of specific exemptions from these position limits to swap dealers who are purchasing futures contracts to hedge their positions arising from the sale of index-related swaps to third parties. The CFTC also has granted "no action" letters to two other traders selling index-related products that allow them to hold positions at levels above the standard speculative position limits. The report recommended that the CFTC limit the positions of index traders to the standard speculative position limits for wheat futures.

The CFTC is seriously considering this recommendation and will examine it in its upcoming hearings. The CFTC has received many comments in response to recently issued concept release regarding whether a separate risk management exemption for persons hedging purely financial risks is appropriate. We are evaluating the comments received from the concept release.

#### **Recommendation #2: Take further action if necessary.**

Based on the performance of the wheat contract during the expiration of the July futures contract, we are not yet satisfied that the changes made to the contract are sufficient. The CFTC will continue to closely monitor the performance of the wheat futures contract. We will consider further actions that are necessary, to ensure that the wheat futures market performs its function of providing for reliable price discovery and risk management.

#### **Recommendation #3: Analyze other agricultural commodities.**

There also have been convergence problems in the corn and soybean markets, but the problems in these markets have not been as severe or persistent as the problems in the wheat market. There have been several issues in the cotton market as well. The Commission will continue to monitor all agricultural futures markets for problems. The improvements to our COT reports that I described earlier should facilitate our efforts in this area and help provide the type of analysis recommended by the Subcommittee.

#### **Recommendation #4: Strengthen data collection for non-agricultural commodities.**

As I have outlined, we are also making several improvements to the transparency of our markets, including the extent to which index traders have positions. As part of these improvements, we will be collecting and providing more data to the public about the nature of the trading in all of our commodity markets.

### **Conclusion**

Over the past several years there has been unprecedented volatility in the commodity markets. It is not the job of the CFTC to determine whether prices are too high or too low. It is the job of the CFTC to ensure that all of our commodity futures markets are free from fraud, manipulation, and excessive speculation. It is our job to ensure that these markets can fulfill the basic purpose for which they were established—to provide the producers, users, and consumers of a commodity with a means to manage the price risks arising from the production, use, or consumption of the commodity. I believe the CFTC must use all of its statutory authorities to fulfill this responsibility. I look forward to continuing to work with the Members of this Subcommittee on these important issues.





## National Grain and Feed Association

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Testimony of the  
National Grain and Feed Association

to the  
Permanent Subcommittee on Investigations  
Committee on Homeland Security and Governmental Affairs  
U.S. Senate  
July 21, 2009

Presented by Thomas Coyle  
Chairman

Good afternoon, Chairman Levin, ranking member Coburn, and members of the subcommittee. My name is Tom Coyle. I am General Manager of Chicago & Illinois River Marketing LLC in Chicago, Illinois, and I serve as the elected industry chairman of the National Grain and Feed Association (NGFA).

The NGFA is the national nonprofit association representing the grain, feed and processing industry and related commercial businesses. Our 1,000 member companies are geographically diverse; range from very small to very large; comprise privately held firms and cooperatives, grain handlers, processors, exporters, long and short hedgers. We estimate that more than 6,000 NGFA-member facilities handle, store, process and export well in excess of two-thirds of U.S. grains and oilseeds produced every year.

One common thread running through NGFA-member companies is that we rely on efficiently functioning markets in purchasing and merchandising the U.S. crop and in assisting producers with their marketing strategies. Futures markets that facilitate accurate price discovery and effective hedging are an integral part of those functions.

I appreciate the opportunity to testify today and I congratulate you on the recent publication of a very interesting and insightful report about the U.S. wheat markets. We believe this report examines futures market data and the views of futures market participants in a unique way that offers some fresh new perspectives on U.S. wheat futures markets over the past few years.

### **New Entry of Investment Capital into Agricultural Futures Markets**

We began noticing the entry of investment capital into agricultural futures markets in larger volumes three to four years ago. At that time, participation of investment capital in our markets seemed more a matter of interest than of concern. We believed then, and we still believe today, that

the attractiveness of agriculture as an asset class in investor portfolios is a positive signal about the vibrancy and future prospects of our industry.

However, over time and as the level of capital invested in agricultural futures has increased dramatically, we have become convinced that it has reduced the effectiveness of futures as a hedging tool for our members, the traditional commercial grain hedgers. The impact has been particularly dramatic on the Chicago Board of Trade wheat contract. As the subcommittee's report points out, "Commodity Index Traders" as defined in the weekly Commitments of Traders (CoT) report issued by the Commodity Futures Trading Commission (CFTC) currently hold about 55% of open interest in the wheat contract when spread trades are excluded – which we have said for the past year is the best way to represent investment capital's participation. Their share of open interest has remained at consistently very high levels regardless of price: from \$3.42 in January 2006, through the February 2008 peak of \$13.34, to the current market of \$5.11. The latest CoT report shows Commodity Index Traders hold net ownership of 162,532 contracts, which represents 196% of the latest USDA estimate for U.S. 2009 soft red winter wheat production.

To date, positions held by commodity index traders have been mostly long-only, held for extended periods, and non-responsive to changes in price. We believe that this situation, in which a large portion of the crop is not for sale at any price for extended periods, has sucked liquidity out of the contract and has contributed to extreme volatility such as seen last summer in the soft wheat contract.

There is no doubt that other factors are at work, too. In recent years, large soft wheat crops and stagnant export markets, changes in domestic demand patterns, increased fuel and transportation costs, and other factors all have contributed to a changing marketplace. We believe strongly, though, that disproportionate participation of investment capital has been the significant contributing factor to a disconnect between cash wheat values and wheat futures prices.

It is important to note here that we have not seen evidence of efforts to intentionally manipulate the wheat contract or other agricultural futures contracts. The funds and institutional investors seeking exposure to agricultural commodities are investing on behalf of individual investors saving for retirement or college or any number of other goals. For this reason, our association has not historically supported limits on participation in futures markets; but our industry's recent experience has prompted the NGFA and its members to evaluate carefully how best to preserve the wheat contract's utility to commercial grain hedgers and their farmer-customers.

#### **Importance of Efficient Futures Market Performance**

Efficient performance of futures markets is critically important to grain hedgers and to U.S. agricultural producers who traditionally have relied on their elevator – the first-purchaser of their grains and oilseeds – to transfer risk and help optimize returns from the market. The subcommittee report provides a good example of a typical hedging transaction, but it may be useful to walk through a simple scenario to illustrate the importance of a properly functioning futures contract to grain hedgers and producers:

Often, when an elevator purchases grain from a producer, the parties enter into a forward cash contract under which the producer agrees to deliver a specified amount of commodity to the elevator at a specified future time and location. Such forward cash contracts come in many different forms to help

serve the varying needs of producers; typically, the price ultimately received by the producer is based on a futures price.

When an elevator enters into a forward cash contract to buy commodity from a producer, the elevator usually hedges its risk by selling futures on a regulated commodity exchange. The elevator generally enters into this "short" futures position in a similar quantity as purchased from the producer, and in a futures contract that roughly coincides with the expected date of sale of the commodity.

As the futures contract nears expiration, the elevator relies on the relationship between cash and futures values – known as the basis – to converge. Convergence is a bedrock fundamental principle of futures markets on which hedgers have relied for decades. In the absence of a predictable relationship between cash and futures – i.e., lack of convergence – the elevator lacks a reliable benchmark with which to help establish a bid to the producer and to place a value on the commodity when selling it. It is just such a lack of convergence, coupled with historically large and volatile basis swings, that grain hedgers have been dealing with for the past two to three years.

This scenario makes clear several critical functions of futures markets: to help grain hedgers manage business risk (i.e., to hedge their price risk and inventory risk); to assist both producers and elevators in valuing their product accurately, whether buying or selling; and to facilitate risk transfer and marketing opportunities for producers as they utilize cash forward contracts offered by their elevators.

Last year's extreme volatility in wheat markets dramatically emphasized the disconnect between cash and futures values for soft red wheat. While cash markets continued to function well in providing accurate valuations of wheat at a given location and time – as cash markets must to facilitate efficient movement of commodities – traditional basis relationships between cash and futures seemed no longer to apply. Futures values ran up aggressively, becoming divorced from cash values that remained at levels based on supply and demand fundamentals.

As cash and futures diverged, grain hedgers were subjected to larger and larger margining requirements in order to maintain their short futures positions and their hedges. The result was extreme financial stress for grain hedgers, who were compelled to borrow several multiples of their normal needs just to maintain their futures positions. The borrowing limits of hedgers were severely strained, as was the capacity of lenders to respond. Our industry narrowly escaped a real tragedy in which many firms could have been forced out of their hedge positions and out of business. The agribusiness lending community responded well to the crisis, but the entire episode has led some lenders to question whether futures provide an effective hedge – and has generated continuing concern among hedgers about whether lenders would have the capacity to respond in a similar fashion if the situation was repeated today. The feedback we've received from the banking community says they would not.

As to the ripple effects for producers, many elevators were forced by financial constraints to reduce or even eliminate cash forward contract offerings that previously had been available to producers. Many hedgers simply were not able to take on the additional financial exposure that writing more forward contracts would have created. Extreme volatility compelled elevators to price grain purchases from producers more cautiously; far from producing an automatic windfall to the elevator, greatly increased risk and much higher costs to finance hedges forced such action. As a result, producers were frustrated in attempts to lock in favorable pricing opportunities at a time when their fuel and other input costs were escalating dramatically. Our member companies' traditional function as

a conduit for efficient pricing to the producer was impaired as the wheat contract failed to provide accurate pricing signals. Although not the sole cause, we believe strongly that investment capital played a significant role in driving futures values to artificially high levels and threatening the viability of the wheat contract.

#### **Potential Solutions to Re-Establish Cash/Futures Relationship and Convergence**

The NGFA has been working actively for solutions to the performance problems of the CBOT wheat contract, and we deeply appreciate the CME Group's openness and responsiveness to our industry's concerns. The NGFA and the CME Group have maintained an ongoing dialogue about how best to enhance the contract's performance, a discussion that continues today. We initially hoped – and the CME Group may have assumed – that markets would correct on their own, as efficient markets tend to do over time. However, the extraordinary situation in the wheat contract has prevented the market from correcting in a timely way. As a result, some commercial grain participants have reduced their use of the contract as a business strategy due to reduced hedging efficiency. This is particularly true for the hedging of non-U.S. production. The result is even less "commercial short hedging" which further amplifies the impact of long-only participants.

One important component in this discussion is enhanced transparency in futures markets. In early 2007, the CFTC introduced additional detail into the CoT report that our industry found very useful. Reporting on positions of Commodity Index Traders in the CoT report aids commercial grain hedgers in determining whether markets are moving in response to fundamentals of supply and demand or other factors. Chairman Gensler has announced that additional enhancements to the report will be made, including disaggregating positions of swap dealers and managed money funds. We believe that information will be helpful. We would also recommend that the Commission consider providing the same level of detail in the "lead month" – the contract month with the largest open interest – along with the total open interest for each commodity in the CoT report to further enhance transparency. While this reporting would not necessarily improve convergence, the information gained would assist commercial grain hedgers in their decision-making and would also assist the Commission and public policymakers in evaluating participation of various types of traders.

With regard to re-establishing convergence, we are hopeful that contract changes being implemented now by the CME Group – a seasonal storage rate, additional delivery locations, and changes in vomitoxin specifications – will move the wheat contract back toward convergence and preserve the contract's utility for its traditional users. These changes are significant, and we acknowledge that the exchange has moved quickly by historical standards. While the changes may not go as far or as fast as many in our organization would prefer, we believe the CME Group is committed to restoring the contract's performance.

We can appreciate the CME's desire to proceed carefully to avoid creating other problems, but we have expressed our view that they must be prepared to move quickly on additional measures to fix the contract if the current changes don't have the desired effects. We understand the CME Group is looking closely at a Variable Storage Rate concept that we believe holds promise. We have also suggested to the CME Group a Modified Compelled Loadout element that we believe, if added to the contract, would restore convergence. We have urged the CME Group to lay the groundwork now for additional changes, if needed to re-establish convergence, and we believe they will be prepared to act. If the CME Group moves to adopt either of these concepts or other changes, it will be critically

important that the CFTC is prepared to move contract improvements through its approval processes expeditiously. I would be happy to provide more detail on these concepts.

Historically, the NGFA has been a very free-market organization. We would much prefer to see the wheat contract come back into balance with minimal intervention as we work with the CME Group on constructive contract changes. However, if that doesn't occur soon, and if the changes being implemented by the CME Group do not prove sufficient, other measures could prove to be necessary. Among these options is a concept release published recently by the CFTC that would revamp the process by which hedge exemptions are issued by the Commission and phase out over time the no-action relief from speculative position limits that has been granted to two index funds – concepts similar to recommendations in the subcommittee's report. The NGFA has advised the CFTC that a reappraisal of these policies may be timely. At this time, we do not advocate a complete end to hedge exemptions for commodity index traders and swap dealers, but we have advised the Commission of our notional support for a re-examination of its policy on hedge exemptions and, potentially, tighter regulatory standards for hedge exemption eligibility.

I would provide just a few words of caution as I conclude. At a certain level, risk and volatility in markets is necessary, and a good thing. Some amount of volatility always has been inherent in agricultural markets as we are so dependent on the vagaries of weather, supply and demand around the world and other factors. Our member companies and the producers with whom we work so closely have learned over the years to manage these risks and to capitalize on a reasonable amount of volatility. We would not want to see markets legislated or regulated so firmly as to remove producers' and hedgers' opportunities for favorable returns in a well-functioning marketplace; nor would we want to see a return to the days of constant surpluses, with large stocks hanging over markets and damping down opportunity for producers and elevators. The challenge is to find the right combination of changes to contract terms and appropriate public policies that will ensure the CBOT wheat contract serves its original purpose: to provide price discovery and risk management to their traditional users.

To that end, we look forward to continuing a close and open dialogue with the CME Group, the CFTC and the subcommittee. I would be happy to respond to any questions.

STATEMENT OF  
THE AMERICAN BAKERS  
ASSOCIATION

PREPARED FOR THE  
SENATE PERMANENT SUBCOMMITTEE  
ON INVESTIGATIONS

July 21, 2008

*Excessive Speculation in the Wheat Markets*

American Bakers Association  
*The Voice of the Baking Industry Since 1897*

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The American Bakers Association (ABA) thanks the Senate Permanent Subcommittee on Investigations, and especially Chairman Carl Levin and Ranking Member Tom Coburn, for holding this critically important hearing on *Excessive Speculation in the Wheat Markets*. ABA greatly appreciates the opportunity to present its views to the Committee.

ABA is the national trade association that serves as the principal voice of the American wholesale baking industry. Its membership consists of more than 200 wholesale bakery and allied service firms. These companies include a variety of sizes, ranging from family-owned enterprises to Fortune 500 corporations. Together, these companies produce approximately 80 percent of the nation's baked goods. The baking industry generates over \$70 billion in economic activity annually and employs close to half a million highly-skilled people.

### **Introduction**

Since the inception of the grain exchange over 150 years ago, bakers and other wheat users have utilized this medium for purchase of necessary ingredients. Agricultural futures markets were created as a medium for producers to sell their commodities, including wheat, to users of the physical product. As stated on the Minneapolis Grain Exchange website, these markets were created to "address price risk management needs of buyers and sellers [and to] promote fair trade and to prevent trade abuses in wheat, oats and corn."<sup>1</sup> These markets enabled farmers to know what price they could receive for their grains in coming months and years and allowed manufacturers to plan for the future by using these same price points as a component for the food products they produce. This was, and still should be, the intent of these critical markets.

Unfortunately the true purpose of these markets has been skewed as new investment opportunities in agricultural commodities have arisen. With the influx of a category of "buy and

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<sup>1</sup> Minneapolis Grain Exchange: About MGEX: <<http://www.mgex.com/history.html>>

hold” investors, commodity prices rose to record levels in 2008. Index funds increase market volatility when they enter the market using a “buy and hold” strategy in an exchange not originally created for investment purposes. Unlike the traditional speculator, who provides valuable liquidity to the markets and often acts as a link between agricultural producers and end users through buying and selling, index funds simply buy and buy more. They are buying agricultural commodities and using this investment as a new, marketable asset class. Grain is not an asset class but an ingredient in many basic foodstuffs, staples of the American diet.

The increased, unrestricted participation of these index funds artificially amplified the price of agricultural commodities, including wheat, in 2008, and this continues today. Physical users of the commodity compete with asset holding investment groups who operate with no limits to the amount of wheat they can purchase, unlike traditional market speculators. Due to the index funds’ “buy and hold” strategy, volatility has greatly increased, adding undue financial risks to farmers and end users, including bakers.

Price discovery based on market fundamentals has diminished in importance in today’s markets. Traditional hedging tools once allowed producers and end users to hedge their financial exposure, but now these same tools are difficult to manage and finance since index funds entered the wheat market. Historically speaking, a 10 cent price change in any wheat futures contract was considered extreme. But today, market fluctuations of 30 to 40 cents a day are all too common. As a recent example, in late May, wheat prices on the Chicago Board of Trade rose by over 30 cents in one day, just to have prices fall by almost 60 cents a few days later. This represented a 9.5 percent drop in prices in one day. On Monday, July 13<sup>th</sup>, 2009, prices again rose by 25 cents. As long as index funds hold up to 196 percent of this year’s wheat contract<sup>2</sup>

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<sup>2</sup> Commodity Futures Trading Commission, Commitment of Traders Report:  
<<http://www.cftc.gov/dea/futures/deacbtlf.htm>>



and operate without contract limits, volatility in the markets will continue to harm farmers, food producers, and American consumers.

In addition, examining data compiled from January 2005 to December 2007, the daily average trading ranges for the Chicago wheat contract increased 158 percent, with a similar trend in wheat contracts traded in Kansas City and Minneapolis. Over the last six months of 2007, ranges in the Chicago wheat contract increased to 226 percent.

Implied volatility has also increased at an alarming rate. From January 2005 to December 2007, the daily volatility of the wheat pit at the Chicago Board of Trade has increased 34 percent. A similar pattern exists when looking at the average wheat futures market volatility within the last six months of 2007, with variations of up to 39 percent.

This problem is not limited to Chicago wheat futures but also impacts other grain exchanges. As an entire commodity sector, volatility has been elevated due to the activity of index funds. The significance of the index fund position is increased due to the finite nature of the supply of physical wheat. Wheat is a one crop per year commodity. Once harvest is complete there will be no opportunity to increase the supply until the following year. In other words, wheat growers can't plant more to satisfy market demand once the season has ended. Physical users of the commodity will acquire ownership equivalent to their usage levels and producers will sell their available supply up to the amount they have in their possession. With accumulation of long only positions by index funds, the availability of futures contracts diminishes as they effectively take contracts out of the available pool. The result is classic economic theory of supply and demand; the few remaining contracts are price rationed to reduce the demand for additional purchases of contracts.

Because of the inelastic demand for basic food products such as bread, end users are forced to continue purchasing contracts as the physical commodity is needed to produce food. As a result, the price of the commodity is higher than it would be if the index fund long position was not in existence, or if the fund operated under specified contract limits. In addition, resulting volatility renders the market much less effective as a hedging tool. When viable contracts representing major portions of the wheat harvest are technically taken off of the market by “buy and hold” investors, market volatility will always increase. This, in turn, eventually leads to higher food prices for American families.

#### **Baking Industry Impact**

As mentioned before, the baking industry generates over \$70 billion in economic activity and employs almost half a million people. This economic activity came under heavy pressure in late 2007 and early 2008. As the Subcommittee is aware, wheat prices skyrocketed to record highs during this time, pushing many bakers to the limits of running a viable operation. In March and April 2008, wheat, cotton, soybean, and later corn prices, all skyrocketed to new record levels. Wheat on the Minneapolis Exchange rose to just over \$24 a bushel, almost four times above the historic average, and three times above prices from the previous year. Wheat traded on the Chicago Board of Trade rose to above \$13 a bushel, well above prices set the previous year. The daily move limit, or the limit to the amount any commodity can rise or fall during one trading day, was reformulated in January 2008 to account for Minneapolis Grain Exchange hitting the daily move limit on 16 of 21 business days and all three grain exchanges hitting the daily move limit for five consecutive days in February. The impact of these extreme price movements was that the exchanges closed down a few minutes after opening, meaning that

farmers could not sell their commodities nor could bakers purchase needed ingredients for food production.

In response, members of the American Bakers Association participated in multiple events and held many meetings with Congress and Administration officials to discuss solutions to the crisis. In March 2008, ABA members filled the halls of Congress to petition their elected leaders for assistance in overcoming the looming food price crisis as part of the Band of Bakers March on Washington event. Follow up visits with many members of Congress occurred in additional meetings in June and September. ABA was also fully engaged with the Commodity Futures Trading Commission (CFTC) this past year, participating in the April and July meetings regarding volatility in the markets. In January 2009, ABA welcomed the opportunity to meet with staff members of the Subcommittee who were gathering critical information to create the recent report that spurred this hearing. Most recently, ABA submitted comments to the CFTC supporting the concept release proposing that new rules be offered to impose limits on index funds. ABA has been fully engaged in this issue as it is critically important to the basic operations of bakers across the country.

ABA was also invited to testify in Congressional hearings held by the Joint Economic Committee and the House Committee on Small Business in May 2008. Richard Reinwold, owner of a small family retail bakery in Long Island, New York, testified to the Joint Economic Committee that record high wheat prices were detrimental to his business:

“In the last 12 months, we have seen explosive price increases on just about every commodity we use. This has created a perilous situation that threatens our ability to continue doing business in our community. For example, a one-hundred pound bag of bread flour that cost \$17.00 in 2006 today costs \$52.00. Semolina flour was \$21.00 per one-hundred pound bag; today it is \$72.50. Soy oil and eggs have also doubled in the last year.

In a matter of weeks, our cost of goods sold soared to an all time high. Our bowl cost, or the cost of dough coming out of the mixing bowl, went from twenty-two cents per pound to fifty-one cents per pound for rye bread.

How does one respond to such increases? In the past, Reinwald's Bakery has tried to couple small price increases with a strategy that enabled us to 'sell' our way out of difficult times. The classic business response to rising material costs always has been to increase prices, cut labor, eliminate waste, seek economies of scale and pressure suppliers. We have been forced to do all of these things recently and until December of last year our strategy was working. Then in January the crisis came full circle – flour prices again reached new highs and wheat supplies plummeted to new record lows. Today I ask myself what strategy will we use to survive this year - what will we do now?"<sup>3</sup>

Frank Formica, owner of Formica Brothers Bakery in Atlantic City, New Jersey, shared a similar story in his testimony before the House Committee on Small Business:

"Let me share a couple of examples of how the current conditions are impacting Formica's and our customers. Formica's uses over 50,000 pounds of flour a week. The price of baker's flour had been stable for well over 20 years at 14 cents a pound. Starting in September 2007 the price of flour jumped until it reached a peak of over 60 cents a pound in March. Today the price of flour has moderated a little. What does this mean to Formica's? A year ago we paid \$7,000 a week (\$364,000 a year) for flour .... Today that number is \$20,000 per week (\$1,040,000 a year) for the same amount of flour.

In addition to flour, all of our ingredients have substantially increased. On top of ingredients, the cost of distributing our products has soared - further threatening my business and the livelihood of the families of my employees. Formica's uses over 600 gallons of fuel a week to deliver product to our whole sale customers. Last year those costs averaged \$1,200 a week, or \$62,400 a year; today the cost is \$2,000 a week, or \$104,000 a year, for the same amount of fuel."<sup>4</sup>

In addition to these comments shared with Congress, Len Amoroso, owner of Amoroso Baking Company in Philadelphia, Pennsylvania, added his experience in comments given during a press conference held in conjunction with the ABA sponsored Band of Bakers March on Washington D.C. in March 2008:

"A year ago my company was paying \$14.66 per hundred pounds of flour. Two weeks ago I was quoted \$57 for that same flour. That is nearly a 400% increase in my main ingredient. At that price, my flour cost would increase

<sup>3</sup> Richard Reinwald, Testimony Before the Joint Economic Committee, May 1, 2009

<sup>4</sup> Frank D. Formica, Testimony Before the House Committee on Small Business, May 15, 2009

over \$13,000,000 for the year. There is no way my company or any bakery in the country can absorb that kind of an increase without passing it on to their customers. The impact flour prices have on consumer pricing is dramatic. Producing with \$57 flour, I would need to raise my prices over 32%. Even if flour were to stabilize at current prices which are around \$40 per hundred pounds, we would need a 20% increase over last year's bread prices.

In addition to the price, we have had to deal with volatility in the markets that is unprecedented. For a two week period in February, wheat was increasing so fast that the markets were closed minutes after they opened. For decades the wheat markets could only increase by 10 cents per bushel in any day. Once that limit was reached the markets were effectively closed for trading until the next day. Because that limit was being reached within minutes of the market opening, the limits were increased to help stabilize the markets. Now we see days where the price per bushel has risen \$1.35 in a day. Before it would take nearly 5 days for that to happen, which I never remember happening in my 40 years of experience.

With this type of volatility, the small baker in this country is going to find it increasingly difficult to manage his business and stay profitable. If he buys flour at the wrong time his cost can be substantially higher than his competitors. If he waits to buy, the market can run up on him to the point he can't afford to pay for the flour."

These experiences are similar throughout the entire wholesale and retail baking industry.

The impact of market volatility has driven away smaller, but extremely important market participants. Small businesses, including bakers, grain elevators and millers, who cannot qualify for large credit lines, may find it extremely difficult to participate in the current market. For example, in December 2007, the required wheat hedging margins at the Chicago Board of Trade increased 114 percent from the initial \$700 per contract to \$1500 per contract. During a nine day time span in October 2006, these required margins rose by \$450, a 56 percent increase due to the upward volatility of the wheat market. These businesses may look for alternative hedging mechanisms since their ability to maintain liquidity is greatly reduced by an increasingly volatile market. Hedging in the futures markets may become an activity reserved for companies that carry extremely large amounts of liquidity and credit.

**Convergence**

The lack of convergence continues to be a major issue in the futures market. In an effectively operating commodity market, cash and futures prices will tend to come together during the delivery month. However, particularly in the Chicago wheat market, wheat futures prices are increasingly disconnected from wheat cash prices. As published in the recently-released report from the Permanent Subcommittee on Investigations, from 2000 to 2005, the average daily difference between the average cash and the futures price for soft red winter wheat traded on the Chicago exchange was approximately 25 cents. During the second half of 2008, this price differential jumped to between \$1.50 to \$2.00 per bushel higher than the average cash price, "an unprecedented price gap," according to the report. Most recently, the July Chicago Wheat contract continued to lack convergence, with a 50 cent gap between cash and futures prices. While an improvement over a \$2.00 per bushel gap, it is still double that of the historic average.

Commodity prices fluctuate for a number of reasons, including increasing/decreasing demand, adverse weather, supply problems (including crop disease), and other natural market factors. While these natural market factors played, and continue to play, a part in commodity markets volatility and the attendant lack of convergence, the impact of the index fund cannot be understated. ABA strongly believes that the lack of convergence exhibited in the market, and particularly the Chicago wheat market, is a symptom of the problem caused by the accumulation of long-only positions by index funds, rather than the problem itself.

ABA greatly appreciates the efforts of CME to address convergence issues with the wheat contract through increasing barge rates and adding delivery points. However, these actions are directed toward a symptom rather than the root problem.

Although traditional supply and demand economics were also at play in 2008, the market's inordinately volatile reaction to record low wheat supplies points to a deeper cause. Support for this view is evidenced by what occurred in the cotton contract during this same time. Like wheat today, cotton supply in 2008 was ample to meet the needs of the market. But prices, irresponsive to traditional market variables, followed a similar trend as wheat, also reaching record highs. While wheat prices have tempered, volatility, as previously discussed, and convergence, continue to disrupt the functionality of markets.

#### **Policy Solutions**

Congress and previous administrations understood the possibility of a speculator "cornering the market," which is why the government first instituted speculative contract limits. But the index fund has been categorized differently from that of a traditional speculator – they operate under the auspices of a bona-fide commercial hedger. Bona-fide commercial hedgers receive an exemption allowing them to operate without contract limits, and are only limited to the actual amount of grain they will use for food or feed production. Due to this discrepancy, the index fund currently operates in the market without encountering any natural or regulatory limit to the amount of contracts that can be purchased. ABA strongly believes that index funds must operate within the confines of a contract limit, similar to the limits that traditional speculators have efficiently operated under for many years. In order to address this critical market issue, ABA urges Congress and/or the Administration to:

- Restructure the definition of a commercial hedger to ensure that only those entities that use the physical product for production purposes continue to receive the unique benefits of the current definition.
- Restructure reporting classifications to accurately report contract holdings of commercial hedgers, index funds and all other contract holding entities.

- Place appropriate contract limits on the index fund, similar to those contract limits traditional speculators currently operate within.

These actions are critical to restoring the integrity of the Chicago Wheat contract, and all other wheat contracts, and will allow the market to return to manageable volatility. As such, ABA fully supports the Subcommittee's recommendation to phase out existing wheat waivers for index traders by creating a standard limit of 6,500 wheat contracts per trader.

In closing, ABA would again like to thank Chairman Levin and Ranking Member Coburn, as well as members of the Subcommittee, for the opportunity to provide the Association's views on this important subject. Volatility in the markets is a major concern to the baking industry. Today's volatility represents millions of dollars daily in undue financial risk to the industry. Our hope is that the Commodity Futures Trading Commission will react quickly to implement these limits on wheat contracts traded through the exchanges in order to reduce volatility and improve convergence. Only through these actions will the commodity markets return to responding to natural and fundamental supply and demand influences.





**Consumer Federation of America**

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**STATEMENT OF DR. MARK COOPER  
DIRECTOR OF RESEARCH**

**on**

**EXCESSIVE SPECULATION IN COMMODITY MARKETS  
AND  
THE COLLAPSE OF MARKET FUNDAMENTALISM**

**Permanent Subcommittee on Investigations  
Committee on Homeland Security and Government Affairs  
Hearing on Excessive Speculation in the Wheat Market  
United States Senate**

**July 21, 2009**

### Summary

The debate about whether excessive speculation contributed to the run-up in commodity prices is over. The reports of this committee on oil, natural gas and most recently wheat, as well as my own analyses of oil and natural gas, not to mention dozens of others, leave no doubt that excessive speculation was an important cause of problems in commodity markets. The only question on the table is what we should do to prevent excessive speculation from afflicting these markets in the future.

The speculators will continue to bloviate about market fundamentals being the sole cause of the problem, so it is critical to walk through the elements of the correct explanation, which this Committee's extensive research supports. To reach the correct solution to the problem, we need to not only lay to rest the claim that market fundamentals explain the recent gyrations in commodity markets, but also to bury the discredited theory of market fundamentalism on which that claim stands. This is not just a play on words, but a critical step toward a solution. The theory of market fundamentalism was the cornerstone for the adoption of policies that created the conditions for the surge in excessive speculation. Bad policy played a key role in creating the decade of volatility. Bad theory was used to justify bad policy. Adherence to the theory blinds us to the correct policy.

It is time for us to abandon the market fundamentalist view that sees regulation and antitrust as the *ex post* clean up after the occasional market failure, and to return to the New Deal view which understood that regulation is the *ex ante* prophylaxis to prevent market failure. We must restore the institutions of prudential regulation that served us well for half a century so that commodity and financial markets can be returned to their proper, constructive role in society.

For the financial system to play its proper role in society, there are three key functions it should provide. "Manage risk, facilitate transparency and promote fairness among market actors." Failure to properly execute these functions results in inefficiency, starves the economy of the resources it needs to thrive and can lead to financial panics, manipulation, swindles and fraud.

Similarly, we must keep the vital function of commodity markets in mind as we study the collapse of market fundamentalism in the sector. When a well-regulated commodity market exists, there is a healthy relationship between commodity markets and the real economy. The commodity markets facilitate the functioning of the real market by discovering price and allowing real production to be adjusted to meet the needs of the real economy. The function is to smooth the flow of commodities from people who produce the goods to people who consume them. When this relationship is disrupted because of inadequate regulation, excessive speculation undermines the ability of the market to provide its vital functions for the real economy – driving prices too high, but simultaneously reducing (rather than increasing) supply, creating volatility that makes it more difficult, not easier, to plan production, and forcing commercial traders out of the market.

#### **Market fundamentals are an inadequate explanation for commodity price movements**

- There are multiple causes of the rising level and volatility of commodity prices and excessive speculation plays an important role
- Fundamentals leave a great deal unexplained in the explosion of oil prices.
- There is a direct link between trading and rising prices
- There are strong incentives to push prices up

### The collapse of market fundamentalism as an economic theory

- The efficient market hypothesis, the income inequality hypothesis and the “less government the better” hypotheses are all wrong.
- There are fundamental flaws in unregulated markets that lead to market failures
  - Lack of transparency and asymmetric information
  - Perverse incentives
  - Agency
  - Conflicts of interest
  - Unfairness/inequality

Free markets hid information, as the Committee has shown in the Amaranth investigation. Perverse incentives exist in the unidirectional interest of index traders and the incentive of large traders to pump up volume to collect fees, as well as the creation of commodities as asset classes, which undermines the function of the market as an aid to the flow of physical goods. Conflicts of interest are strong where the large commercial traders both hold assets and give advice, hyping the market up to increase the value of their assets. The escalation of price and volatility, which drove physical traders out of the markets, represented a basic unfairness and inequality that harmed small physical traders.

### Recommendations

In light of the inability of market fundamentals to explain commodity market gyrations and the collapse of market fundamentalism, it is time for policymakers to abandon the market fundamentalist view that sees regulation and antitrust as the *ex post* clean up after the occasional market failure, and to return to the New Deal view which understood that regulation is the *ex ante* prophylaxis to prevent market failure.

- Chase out the bad guys
  - All traders must register and be certified for honesty and competence.
  - All trading must be reported across all transactions
- Eliminate the funny money
  - Raise margin requirements
  - Increase capital reserve requirements
- Reduce the ability to push prices up
  - Lower position limits and tie position limits and margin policies to needs of physical traders
  - Lengthen settlement windows
  - Ban conflicts of interest (analyst's reports that enrich analysts' portfolios)
- Restore the proper functioning of commodity markets and their regulators
  - Enforce meaningful speculative limits
  - Do honest analysis (classify traders correctly)
  - Close the loopholes (foreign boards of trade exemptions, the Enron and swaps loopholes)
  - Create minimum criminal penalties for violation of commodity laws
- Redirect investment to productive long-term uses
  - Put a tax on short-term capital gains
  - Move pension funds out of speculation
  - Ban institutional index funds

Mr. Chairman and Members of the Committee,

My name is Dr. Mark Cooper. I am Director of Research at the Consumer Federation of America. We greatly appreciate the opportunity to present our views on commodity market speculation. This Committee has tackled a hugely important issue over the past two years by challenging the received wisdom that commodity markets always get the price right and regulators can do nothing to improve the functioning of the markets. The importance of your enterprise has grown as the economy has sunk into the worst recession since the great depression.

#### **THE DEBATE ABOUT EXCESSIVE SPECULATION IN COMMODITY MARKETS IS OVER**

The debate about whether excessive speculation contributed to the run-up in commodity prices is over. The reports of this committee on oil,<sup>1</sup> natural gas<sup>2</sup> and most recently wheat, as well as my own analyses of oil and natural gas,<sup>3</sup> leave no doubt that excessive speculation was an important cause of problems in commodity markets. The only question on the table is “what should we do to prevent excessive speculation from afflicting these markets in the future?”

The speculators will continue to blaviate about market fundamentals being the sole cause of the problem, so this testimony will walk through the elements of the correct explanation, which this Committee's extensive research supports. In order to reach the correct solution to the problem, we need to lay to rest not only the absurd claim that market fundamentals explain the recent gyrations in commodity markets, but also bury the discredited theory of market fundamentalism on which that claim rests.

This is not just a play on words. It is a critical step toward reaching a solution to the problem. The discredited theory of market fundamentalism was the cornerstone for the adoption of policies that created the conditions for the surge in excessive speculation. Bad policy played a key role in creating the decade of volatility, as shown by our empirical analysis below: Bad theory was used to justify that policy.

Therefore, the testimony is divided into three parts.

In the first part I explain why market fundamentals cannot account for the gyrations in commodity markets. Excessive speculation played a critical role.

The second part presents an analysis of the collapse of market fundamentalism as is made apparent by the melt down of financial markets.

The third part of the testimony presents our policy recommendations.

After we have blown away the fog of market fundamentalism in its empirical and theoretical incarnations, it is easy to see the path to restoring commodity markets to their proper role in the economy.

Thus our analysis launches from a positive perspective – analyzing what actually happened – but moves to the normative, concluding with recommendations about what Congress should do to correct the problem.

A valid scientific claim that A causes B requires three critical elements:

Temporal Sequence: A should precede B

Correlation: A and B should move together in the expected directions, and

Explanatory Linkage: There needs to be a mechanism that shows how and why A would move B.

The first two elements are entirely empirical. The third is frequently inferential. Although there are occasions where one finds a smoking gun – A plans to do something to move B – in the social sciences we are frequently required to infer that A caused B based on plausible theories, backed up by circumstantial evidence.

The policy relevance of scientifically valid causal claims is that, based on such explanations, policy makers can adopt policies to change A and expect that the effect will be to change B. In the case before the committee today; if excessive speculation is an important cause of rising and volatile commodity prices, then policies to dampen excessive speculation will have the effect of dampening the upward spiral and volatility of commodity prices. Policy makers might desire that outcome for a number of reasons, like mitigating the impact of unnecessarily high and volatile commodity prices on consumers or restoring the commodity markets to their proper function of smoothing and facilitating the operation of physical commodity markets.

# **PART I: MARKET FUNDAMENTALS ARE INADEQUATE AS AN EXPLANATION FOR COMMODITY PRICE MOVEMENTS**

## **WHEN THE BUBBLE FINALLY BURST**

In June of 2008, with oil prices at about \$120 per barrel, I was asked by Senator Cantwell at a hearing of the Commerce, Science and Transportation Committee<sup>4</sup> whether there was a speculative bubble in oil. I not only emphatically answered yes, but I also stated that absent speculation, the price of oil would be in the range of \$40 to \$80 per barrel, depending on the ability of OPEC to extract cartel rents from oil consumers. At the time, I attributed about \$40 per barrel to excessive speculation. By the middle of July the speculative component had expanded to \$65 per barrel, but then the air went out of the speculative bubble over the course of the summer. As the CFTC announced stricter oversight in response to Congressional pressure and liquidity in the economy began to dry up, speculative money was drained out of the commodity markets. The price of crude oil

plummeted. By the beginning of October, when the passage of the Troubled Asset Relief Program was enacted, which declared a crisis of liquidity, the price of oil stood just above \$80 per barrel. It has traded between about \$30 and \$70 for over nine months. As the economy reflates and liquidity is restored, the speculators will rush back in if regulators allow them to. Indeed, there is already concern that speculators are creeping back in, which accounts for the increase from \$40 to \$70.

This interpretation of the bursting of the commodity bubble is consistent with the explanation we gave for how the bubble got inflated in the first place. Therefore, we revisit the explanation that led us to reject the claim that market fundamentals were the sole cause of the wild gyrations in the oil market and to predict so well what would happen when the speculative bubble burst.<sup>5</sup> Back in June of 2008 the Congress was looking hard at commodity markets and discovering that excessive speculation was a major cause of the dramatic increase in price and volatility. Naturally, it was pressing regulators to do something about it because the commodities that were being driven by speculation play an important part in the real economy.

The market fundamentalists were up in arms at the prospect that Congress or regulatory agencies might actually do something to reduce excessive speculation. Since they believed that only market fundamentals could cause price changes, they argued that Congressional action would be totally misguided. The market fundamentalism message was carried by the big name op-ed economists of the major national newspapers.<sup>6</sup> Their columns, timed to coincide with major Congressional hearings, were intended to blunt the effort to fix the problem.

#### **MULTIPLE CAUSES OF RISING PRICES: EXCESSIVE SPECULATION PLAYS AN IMPORTANT ROLE**

The Op-ed economists were simply unwilling to accept the proposition that financial market can become dysfunctional or overshoot. They insisted that whatever price the market put on a barrel of oil must be right, except, of course, for the price a year earlier, which was half as high. In that case, the previous year's price must have been wrong because it must have been too low. In the world of Op-ed economics it would appear that markets can only err on the low side.

The analysis of the oil market in June-July 2008 must start from the recognition that oil prices had been rising for quite some time, as Exhibit 1 shows. The price increases between 2002 and 2005 reflected a tight market situation that produced the sharpest sustained increase in prices since the Arab oil embargo. Between 2002 and 2005 prices tripled from just over \$17/bbl to just over \$52/bb, or about \$0.73 per month. The 2005 price of just over \$50 per barrel is right in the middle of the range where the oil industry executives have told Congress that the economic cost of delivering a barrel of oil is today.<sup>7</sup> In the two and a half years after January 2005, however, prices increased over four times as fast, over \$3.00 a month, rising to about \$145/bbl at that time. If the 2002-2005 trend had continued, the price of oil would have been about \$65/bbl (see Exhibit 2) in mid-2008.

Thus, we are not saying that markets are not tight or that prices should not have increased, but we are suggesting that the explosion of prices on top of an already rapid price increase was excessive. Speculation would not have the effect it did if fundamentals were not so tight, but there is no doubt that speculation made matters much worse. With the real marginal economic cost of a barrel of oil in the range of \$35 to \$60 per barrel, adding a cartel rent for OPEC which is targeting \$70 to \$80 per barrel,<sup>8</sup> and even a geopolitical risk premium, we conclude that the price at about \$140 per barrel includes a large speculative premium. We think a speculative premium of \$60 to \$70 per barrel is excessive.

The effects of speculation are evident in much more sophisticated models than the simple trend line analysis in Exhibit 2. A paper from the Japanese Ministry of Economy Trade and Industry (METI) echoed our conclusion and the conclusion of the Senate Permanent Subcommittee on Investigations.<sup>9</sup> We reached a similar conclusion when we compare the output of the results of the Energy Information Administration's *National Energy Modeling System*, which is a market fundamentals model used to produce the price projections in the *Annual Energy Outlook*,<sup>10</sup> to actual prices. As Exhibit 3 shows, the model did just fine predicting the price of crude one year in advance for 1995 to 2002. It then began to deviate on the low side. The magnitude of the underestimation for 2008 is just about \$50 per barrel. This is another good indicator of a speculative premium.

Thus, a multi-causal explanation of rising oil prices is necessary, one that combines rising economic costs, rising cartel rents and speculation, but the Op-ed economists seem unable to accept such an explanation. In a multi-causal world, Congress must pick its spots for action. There is not a lot Congress can do to influence the rising economic cost of finding oil and OPEC's ability to collect cartel rents is difficult to challenge in the near term, but there is something Congress can do about excessive speculation. Even if you believe that the social, national security and environmental costs of oil consumption (the externalities) demand aggressive policies to end our national addiction to oil,<sup>11</sup> allowing cartels and speculators to rip the public off is not the way to solve the problem. Maybe we need to get to \$145/bbl oil by 2020, but accelerating that price increase to 2008, with extremely low elasticities of supply and demand, just punishes consumers and the economy, while it enriches members of the oil cartel and speculators, who do not put the money to work solving the problem.

#### **THE EXPLOSION OF OIL PRICES: FUNDAMENTALS LEAVE A GREAT DEAL UNEXPLAINED**

The claim that the problem is solely due to physical market fundamentals just does not fit the facts. What the Op-ed economists want us to do is get out an electron microscope and focus on minute changes in supply and demand that are barely perceptible and not closely correlated with price changes, arguing that in a jittery market these minuscule changes trigger huge price swings. At the same time they ask us to ignore the most obvious changes in trading patterns that are visible to the naked eye and highly correlated with changes in price.

As Exhibits 5 and 6 show, both short term and long term fundamentals were essentially constant over the period from 2002 to 2008. The short-term measure most frequently cited is spare OPEC capacity (see Exhibit 5). While it has fluctuated, it shows no significant downward trend. In fact, over this period, the correlation between excess capacity and price is positive, not negative (which is, of course backwards).

Similarly, the best long-term measure of capacity – the reserve to consumption ratio – is also increasing slightly while prices are increasing (see Exhibit 6). Again, upon close examination we find that the correlation is slightly positive, which is contrary to the claim and expectations. These oil market numbers do not include a doubling of biofuel production, representing a growth of about 1 million barrels per day, equal to about half of the OPEC excess capacity.

If fundamentals did not change and are unlikely candidates as the cause of the explosion in prices, we have to find something that did change. A broad range of analysts and physical traders now point to the explosion of trading as the cause (see Exhibit 7).<sup>12</sup> There is no doubt that there had been a huge influx of money into these markets and a dramatic increase in the number of open positions. The volume of trading increased four-fold in the period from 2002 to 2008, while the value of trading has increased over twelve times and the price has risen a well.

This is just correlation. But the correlation between our causal factors and reality is a lot stronger than the correlation between the Op-Ed economists' causal factors and reality. At least it is in the correct direction; our account is more plausible.

#### **THE LINK BETWEEN TRADING AND RISING PRICES**

Our explanation does not stop with correlation, however. We go a couple of steps further to turn correlation into a proper causal explanation. First, the patterns of price increases we have observed above are coincident with changes in commodity market policy and trading behavior (see Exhibits 8 and 9). We identify specific policy changes that led to changes in behavior that triggered increases in both prices and volatility. This close temporal coincidence strengthens the causal claim.

Second, we identify the conceptual mechanisms through which speculation translates into higher commodity prices.<sup>13</sup> As prices and volatility rise in a market, it gets harder and harder to convince people who have the physical commodity in the ground to part with it. They have to be bribed with higher prices to lift the oil not only because they can expect a higher price in the future, but also because they demand a higher risk premium to insure against the chance that they are selling at the bottom of volatile price swings. This basic fact has been clear in the academic literature for quite some time<sup>14</sup> and it is finally penetrating to the popular press.

Another financial factor behind the price rise that hasn't been talked about much on Capitol Hill or elsewhere is reduced hedging by oil companies on futures markets, says Larry Goldstein, a longtime energy analyst. In the past,



crude producers would offer buyers a portion of their energy output in future years in order to protect themselves if prices pulled back. But energy companies got burned as prices kept rising during the past two years and have since cut back on selling untapped production – forcing prices for energy futures even higher.<sup>15</sup>

Some of the Op-Ed economists do not get this basic fact, arguing that “Investors who buy paper oil do not alter the demand for physical oil.”<sup>16</sup> Others admit that it can happen, although they doubt that it is happening now –

“Under some circumstances, speculation in the oil futures market can indirectly raise prices, encouraging producers and other players to hoard oil rather than making it available for use.

Whether that’s happening now is a subject of highly technical dispute. Suffice it to say that some economists, myself included, make much of the fact that the usual telltale signs of a speculative price boom are missing.”<sup>17</sup>

In theory, high futures prices might reduce physical supplies by inspiring hoarding. But that’s not happening. Inventories are modest.<sup>18</sup>

The Op-ed economists insist that there has to be evidence of hoarding, narrowly defined, to make a colorable claim of manipulation and they point to the failure to build stock as evidence that there is no hoarding. Excessive speculation is not about manipulation, but structural incentives to hold out (not withhold) for a higher price before producers will bring supplies to market. In this context the evidence would not be the obvious build up of stocks above the ground, but the build up of raw materials in the ground, since suppliers are willing to wait to deliver and insist on a higher price.

There is more than anecdotal evidence to support this alternative view. The Energy Information Administration reports that proved reserves increased by 27.5 percent between 2002 and 2007. Production increased by only 12.5 percent. As a result, the reserve to production ratio increased by 14.7 percent. This includes Canadian oil sands reserves starting in 2003. If we exclude that from the total, production growth equaled reserve growth. However, the effect of rising prices is to make more resources economic, so there is no reason to exclude these resources. The Op-ed economists cannot claim we need high prices to stimulate the search for alternatives, and then exclude the very reserves that are rendered economic by higher prices. Moreover, even without the oil sands, the reserve to production ratio is 36 years and the question becomes why a seven-fold increase in price did not lead to an acceleration of production and a decline in the reserve to production ratio. The answer is the incentive to keep crude in the ground. The OPEC cartel engages in explicit supply management,<sup>19</sup> while the oil companies call it capital discipline.<sup>20</sup>

Recognizing the difference between manipulation and excessive speculation is critical. The central issue is not manipulation, like the Hunt’s in silver, or Enron in electricity, or Amaranth in natural gas, although there may be some of that in the present market. The

central issue is a broader structural problem of excessive speculation. Dismissing the possibility of manipulation is a rhetorical point that proves little. Even here we get conflicting accounts of how futures market manipulation might work. On the one hand we are told that manipulation of electricity markets was possible because it cannot be stored,<sup>21</sup> on the other hand we are told that manipulation of oil markets is impossible because it is difficult and expensive to store.<sup>22</sup> The right answer is that the difficulty of transportation and storage increases the ability to push the price up, just as it makes manipulation more feasible.

#### THE INCENTIVE TO PUSH PRICES UP

The above discussion explains how excessive speculation raises the price of the physical commodity. In order to have a complete explanation, we must also offer a theory of why speculators push them up, how they profit by driving prices up. The Op-ed economists are fond of pointing out that if every commodity transaction matches a buyer and a seller, then winners cancel out the losers no matter how high the price (ignoring the fact that the public is the loser when it pays the higher price).

Traders can profit from a rising price in a variety of ways. As long as there is more new money coming in that is willing to bid the price up, the old money in the market benefits by staying long. Given the entry of a series of new pots of money – first banks, then hedge funds, then pension funds, then index funds – this upward spiral is sustainable and profitable.

It is easier to ensure the inflow of funds when you are “advising” the new money what to do. It is easier to sustain the upward spiral of prices when you are hyping the market with reports about how high the prices will go.<sup>23</sup> Traders can engage in wash trades to push the price up.

As account values rise, excess margins and special miscellaneous accounts allow the trader to take money out or leverage more trading, to keep the upward spiral going.

Traders and exchanges benefit from transaction fees that grow with value.

The fact that longs must equal the shorts glosses over the different interests of different kinds of traders. Speculators can be net long (and therefore benefit from constantly rolling over contracts at higher prices) in markets that the regulator cannot see (over the counter) or through affiliates in regulated markets that are not well tracked.

Although we do not approach the issue from the point of manipulation, the historical accounts of hundred of corners and squeezes and the dozens of fines in energy markets in recent years do attest to the motive and opportunity that exists for traders to attempt to push the market up to profit.

### **SPECULATION IS THE SURPRISE, NOT FUNDAMENTALS**

Unable to deal with inconvenient facts, the Op-ed economists resort to surprises and emotions to fill the gap in the analysis.

“When unexpectedly high demand strains existing production, prices rise sharply as buyers scramble for scarce supplies.”<sup>24</sup> “After years of ignoring the rather obvious fact that oil is a finite resource, the world has suddenly become acutely aware of that reality.<sup>25</sup> Well functioning markets are not supposed to be surprised. Indeed, in our account, far from ignoring the facts, the markets were dealing with the facts in the price run up from \$17 to \$50 in 2005. The trend line goes to \$65 in 2008. The surprise is not the tight market; it is the speculative bubble that pushed the price up to \$145 per barrel.

Two pieces of analysis presented to the Energy and Commerce Committee by energy economists provide data that ties our account together. In Exhibits 8 and 9 we identified periods of trading by policy changes that affected trading behavior, primarily by attracting different kinds of players and trading strategies into the market. The upper part of Exhibit 10 shows a categorization of the periods that parallels ours which sees three broad structures – traditional, fundamentals (demand and supply) and financial. The lower part of Exhibit 12 shows the correlation between open market positions and price. We have argued that the fundamentals period began in 2002 and data in the exhibit supports that view. The basic point is that a speculative bubble has been added to the underlying price increase driven by fundamentals.

Exhibit 11 shows the finding cost curve and uses that cost curve to predict crude prices. The rise from about \$20 in 2002 to about \$70 in 2008 is consistent with our earlier trend line analysis and the EIA market fundamentals model. Thus, price tracked fundamental closely until 2006, when the speculative bubble began to inflate.

### **INCONVENIENT FACTS AND NONECONOMIC EXPLANATIONS**

In the final analysis, even the electron microscope cannot find changes in fundamentals that account for the explosion of prices, so the Op-ed economists are forced to abandon economic explanations and embrace psychology.

Everyone in the oil market is attuned to every little twitch that has the potential to damp supply or increase demand. That’s why, for instance, when Libya announced on Thursday that it might cut oil production, oil jumped more than \$5. Meanwhile, when Brazil discovers a huge new oil field, the market shrugs. That is not speculation at work – its market psychology. There’s a big difference. If there is a bubble, that’s what is causing it.<sup>26</sup>

In the end, if it is just psychology, we would urge policy makers to ask themselves whether they are obligated to let the psychos run wild in a market as vital as oil. We submit that you are not. If the traders in this market have become irrationally attuned to “every little twitch” that might increase prices, but disregard facts that might lower prices, it is hard

to conclude that the market is functioning properly. The psychos need a little sedation to restore balance to their perspective. Prudential regulation has the benefit of both preventing excessive speculation and sedating the psychos, not to mention allowing the physical traders to reenter the market and use its price discovery and risk management functions.

**PART II:  
THE COLLAPSE OF MARKET FUNDAMENTALISM  
AS AN ECONOMIC THEORY<sup>27</sup>**

In the year since I offered this explanation of the speculative bubble in commodities, the meltdown of financial markets has opened another layer of empirical evidence to reject the claim that market fundamentals are the sole cause of the gyrations in the commodity markets. Simply put, the economic theory on which that claim rests has been thoroughly refuted.

Although this analysis uses the financial markets as the vehicle for demonstrating the failure of market fundamentalism, this analysis has direct relevance to the examination of commodity markets for a number of reasons.

First, commodity and financial markets share many characteristics as places where paper is traded.

Second, the Commodity Futures Modernization Act of 2000 is kith and kin with the Financial Services Modernization Act of 1999. They share more than similar names. Their structure and intent were to reduce and in some areas eliminate the prudential regulation that was put in place by the New Deal. Indeed, they were the final Acts in the ill-advised, decade-long assault on the fabric of the New Deal. They both instantaneously opened the door to a wave of abuses that the institutional structure of the New Deal had prevented.

Third, for half a century after the New Deal, prudential regulation of financial transactions ensures that the primary purpose of commodity and financial markets in providing important support for the real economy took precedence. The theory of market fundamentalism ignored this important function of these markets in our economy. Finance became an end in itself, rather than a means to the end of a robust real economy in the financial markets; commodity futures became asset classes, traded to increase transaction profits, as described above, rather than instruments for smoothing the flow of physical commodities in the real economy.

Fourth, the CFMA and the FSMA were implemented by an administration that was totally captured by market fundamentalism and which had no sense whatsoever of the important function of these markets in supporting the real economy. The economy has suffered mightily because these financial markets have failed.

Fifth, the bubbles in commodities and financial instruments unfolded in lock step and reinforced one another. They were propelled by the same ill-advised macro economic policies that created vast quantities of liquidity that sought excessive returns in trading profits, rather than meaningful employment in the real economy.

Finally, and above all, the same flaws in market fundamentalism that have become apparent in the meltdown of the financial sector afflict the commodity futures markets. If public policy intends to fix these markets, it must address those underlying flaws

A variety of terms have been applied to the system that has been in place for the last thirty years: “Casino Capitalism,”<sup>28</sup> “Speculative Management,”<sup>29</sup> “wild west capitalism”<sup>30</sup> but the term market fundamentalism has recently been used by both Joseph Stiglitz,<sup>31</sup> a Nobel laureate economist at Columbia University and a former head of the Council of Economic Advisors under President Clinton, and George Soros,<sup>32</sup> a prominent hedge fund manager. We think this is an apt description of the economic ideology that has governed the last thirty years, not only because it captures the content of the economic principles on which the economic system rested, but also because it conveys the sense of a religious belief based on faith rather than fact, which is very much the way advocates and apologists for market fundamentalism act. We use the term market fundamentalism to describe an ideology that rests on several basic principles and assumptions. The cornerstone is the efficient market hypothesis.<sup>33</sup>

- The pursuit of private interest through unregulated markets is all we need to promote the public good, because markets inevitably create efficiency, growth and stability.<sup>34</sup>
- The efficient market hypothesis is the main pillar of market fundamentalism, but there are two other tenets that immediately and inevitably follow from that first premise.
- The inequality that inevitably results from the working of the unregulated market is not considered to be a problem. Indeed, it is deemed a necessity by some.<sup>35</sup>
- Idolizing the market, market fundamentalism must denigrate government. The less government the better is the mantra.<sup>36</sup>

Whatever we call it, the key point is that as long as the institutional structures of the New Deal remained in place in the financial sector, financial crises remained manageable.<sup>37</sup> It was the major financial deregulatory policies and laws of the 1990s that let “Casino Capitalism” run wild.<sup>38</sup> Financial market deregulation was the last of a series of deregulation decisions driven by market fundamentalist ideology that led to disaster. Just as the deregulation of electricity quickly led to the California meltdown, the deregulation of commodity markets led to the Enron debacle, and the deregulation of telecommunications in 1996 played a key part in the technology stock bubble, the passage of the Financial Services Modernization Act in 1999, which repealed the Glass Steagall Act, and the passage of the Commodity Futures Modernization Act in 2000, which prevented the regulation of over-the-counter derivatives, undermined prudential regulation of financial and commodities

markets, intensified the financial crises, and laid the groundwork for the economy-wide meltdown.<sup>39</sup> The remarkable ability of prudential regulation to prevent financial crises has been documented by the Congressional Oversight Panel, <sup>40</sup>which notes that financial crises were a permanent fixture of financial markets in the period before the New Deal institutions of prudential regulation were put in place and in the period after it and after they were torn down by the irrational exuberance of market fundamentalism for deregulation, as shown in Exhibit 12. The fifty-year period of New Deal prudential regulation was remarkably and uniquely free of such crises in the U.S.

Left to its own devices the market fails to consistently achieve its primary function of efficiently allocating resources to uses. Economic theory could envision a more efficient outcome without regulation only by ignoring or downplaying the flaws in the market, but reality could not produce the theoretical outcome because the flaws inevitably assert themselves. The market fundamentalist model has come crashing down. The weakness of the theory was admitted by none other than Alan Greenspan, in Congressional testimony in October 2008. Greenspan, one of the leading architects and advocates of deregulation of financial markets, admitted to a major flaw in the theory.

Those of us who looked to the self-interest of lending institutions to protect shareholders' equity, myself included, are in a state of shocked disbelief... I made a mistake in presuming that the self-interests of organizations, specifically banks and others, were such that they were best capable of protecting their own shareholders and their equity in the firms."<sup>41</sup>

Note that Greenspan's admission is not specific to the financial sector but is a general proposition about economic incentives. Lacking this vital underpinning, the whole theory unravels.

**The efficient market hypothesis is wrong.** Unregulated markets do not automatically create a stable, growing economy. In each of the sectors, there is a critical market failure that prevents the sector from doing what it is supposed to do, efficiently allocating resources to uses. Because the nature of the economic activity varies from sector to sector, the precise form of the market failure will vary, but there are repeated patterns. In the finance sector we now know that self-interest is not enough to ensure prudential behavior.<sup>42</sup> Even the most sophisticated financiers fail to assess risk when financial instruments become too complex and the financial incentives to ignore risks become too strong.<sup>43</sup> The inability to assess and indifference to the risk of default and the difficulty of resolving assets in default undermines the central function of financial markets. The ascendancy of finance undermined and drained resources from the real economy.<sup>44</sup>

**The income inequality hypothesis is wrong.** Trickle down economics does not produce a stable growing economy. Inequality is not a necessary condition for economic progress. To the contrary, inequality is a sufficient condition for economic meltdown. Inequality created by regressive tax cuts for corporations and the wealthy does not provide savings and investment to fuel real economic expansion. A narrow distribution of wealth

does not create a stable base for economic growth, because wealth is not sufficiently spread to support demand.

**The “less government the better” hypothesis is wrong.** The public sector is not inherently inept, and the private sector is not inherently skillful.<sup>45</sup> The charges of public sector ineptitude pale in comparison to the ineptitude, fraudulent accounting, irrational lending and underwriting, and conflict-of-interest-driven abuse in the unregulated and under-regulated markets created by market fundamentalism.<sup>46</sup> Stable economic growth is not the outcome of small government for two reasons. First, it undermines effective oversight of the economy, which plays a key role in establishing the conditions for meltdown. Second, when the efficient market and inequality fallacies start to push the economy off the tracks, the “less government fallacy” prevents public policy from taking the measures necessary to prevent the wreck or put the economy back on track quickly.

The unraveling of the theory is important because it signals the malfunction of the financial sector in the economy. The launch point for the COP analysis is the identification of the critical role that the financial sector plays in society. “A well-regulated financial system serves a key public purpose: if it has the power and if its leaders have the will to use the power, it channels savings and investment into economic activity... A healthy financial system, one that allows for the efficient allocation of capital and risk, is indispensable to any successful economy.”<sup>1</sup>

For the financial system to play its proper role in society, the COP report argues, there are three key functions it should provide. “Manage risk, facilitate transparency and promote fairness among market actors.”<sup>2</sup> Failure to properly execute these functions results in inefficiency, starves the economy of the resources it needs to thrive and can lead to financial panics, manipulation, swindles and fraud.<sup>3</sup>

Similarly, we must keep the vital function of commodity markets in mind as we study the collapse of market fundamentalism in the sector. As the COP suggests for financial markets, when a well-regulated commodity market exists, a healthy relationship exists between commodity markets and the real economy. The commodity markets facilitate the functioning of the real market by discovering price and allowing real production to be adjusted to meet the needs of the real economy. The function is to smooth the flow of commodities from people who produce the goods to people who consume them. When this relationship is disrupted because of inadequate regulation, excessive speculation undermines the ability of the market to provide its vital functions for the real economy – driving prices too high, but simultaneously reducing, not increasing supply, creating volatility that makes it more difficult, not easier, to plan production, and forcing commercial traders out of the market.

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<sup>1</sup> COP Report, pp. 2...4.

<sup>2</sup> COP Report, p. 11.

<sup>3</sup> COP Report, p. 8.

### CRITICAL CHALLENGES

The unraveling of the theory can be linked to a series of endemic problems that afflict inadequately regulated markets. There are six interconnected patterns of harmful conduct that stem from the configuration of the incentive structure that market fundamentalism fosters in the financial sector (see Exhibit 13). The first five are broadly applicable across many sectors of the economy; the sixth applies uniquely to the financial sector. Asymmetric information and agency problems are exploited by individuals to promote private interests at the expense of the proper functioning of the economy. Conflicts of interest, which are allowed in the name of deregulation, overwhelm the system. Perverse incentives and lax oversight misallocate resources and create an endemic fraud problem. The pervasive pattern of unfairness and inequality creates inefficiency and starves the real economy of resources.

The financial sector suffers a moral hazard problem made worse by market fundamentalism. Where risks can be shifted to third parties, they will be, to raise profits.

### Transparency and Asymmetric Information

A flaw in markets that receives a great deal of attention in discussions of the current financial crisis is information transparency.<sup>47</sup> Transparency is a central problem, and the availability of timely and relevant information is seen as a critical factor to achieving efficient outcomes, since lack of transparency makes it difficult to evaluate risk and achieve efficient outcomes. “After all, the fundamental risk/reward corollary depends on the ability of market participants to have confidence in their ability to accurately judge risk.”<sup>48</sup> The availability of information is central to the operation of efficient markets, but left to its own devices the market will under produce information because it is a public good.<sup>49</sup> Asymmetric information wreaks havoc with market functioning. It is for this observation that Stiglitz won his Nobel Prize.<sup>50</sup>

Cooper, identifies the crucial role of information as follows:

Therefore, according to efficient market theory asset price bubbles are prevented by investor’s appetite to buy assets on the cheap and sell them when too expensive. It follows that an asset price bubble can only be formed if investors are willing to buy assets when they are already overpriced, implying that asset bubbles require investors to behave irrationally. This line of reasoning leads to the irrational investor defense of the Efficient Market Hypothesis: to disprove market efficiency it is necessary to prove that investors behave irrationally...Buried deep within the Efficient Market Hypothesis is the unstated assumption that investors always have to hand the necessary information with which to calculate the correct price of an asset. If this assumption turns out to be false and investors are sometimes denied the necessary information to make informed judgments about asset prices, or worse still if they are given misleading information, then it becomes possible for asset price bubbles to form without investors behaving irrationally.<sup>51</sup>



This observation suggests a simple typology of conditions for asset bubbles based on the distribution of information and the tendency of investors to gain in rational action (see Exhibit 14. It seems that the set of conditions where bubbles are not possible is small, if not null.

### **Perverse Incentives**

Market fundamentalism has a pervasive incentive problem. There is an engine of instability in the structure/conduct heart of the unregulated financial market. Fees from making deals became a huge source of income and the quality of the deals mattered less and less.<sup>52</sup> The deals can be sold by conflict-ridden brokers and supported by loans from conflict-ridden banks or securitized by conflict-ridden investment banks and rated by conflict-ridden credit ratings agencies and moved off the balance sheets so that more deals can be made and more fees earned. The broad breakdown results from “devoting relatively little attention to risk assessment,” exhibiting “a willingness to issue extraordinarily risky loans.”<sup>53</sup> These risky loans were attractive as a result of a perverse set of incentives affecting financial institutions that “could sell them quickly in secondary markets while earning large fees from bundling them. Credit rating agencies (who were paid by the issuers) awarded their triple-A seal of approval because they failed to properly evaluate the risk of securitized instruments.”<sup>54</sup>

As long as more money could be pulled in, the day of reckoning could be pushed off. Easy credit and shaky accounting practices create an upward spiral,<sup>55</sup> and tax policy makes it all the more rewarding. Easy money and regressive tax policy accelerate the upward spiral. Bad practices tend to drive out good. Bursting bubbles reveal blatant fraud that was hidden beneath the froth – Enron, Worldcom, Madoff.

In an environment that emphasizes short-term stock market returns and allows risk takers to take out earning quickly, practices degenerate.<sup>56</sup> As the bad actors get their short-term rewards, the good actors become desperate to keep up. The process affects lending,<sup>57</sup> accounting,<sup>58</sup> executive compensation,<sup>59</sup> underwriting<sup>60</sup> and home mortgages.<sup>61</sup> As the former CEO of Citibank put it: “When the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you’ve got to get up and dance.”<sup>62</sup>

Our financial catastrophe, like Bernard Madoff’s pyramid scheme, requires all sorts of important, plugged in people to sacrifice our collective long-term interests for short-term gain. The pressure to do this in today’s financial markets is immense. Obviously the greater the market pressure to excel in the short-term, the greater the need for pressure from outside the market to consider the longer term. But that’s the problem: there is no longer any serious pressure from outside the market. The tyranny of the short-term has extended itself with frightening ease into the entities that were meant to, one way or another, discipline Wall Street, and force it to consider its enlightened self-interest.<sup>63</sup>

Firms made short-term underwriting fees for packaging mortgage-backed securities that have since become known as “toxic assets.” Traders booked short-term profits trading them (or simply marking them up). Executives pushed their subordinates to take more risk because they would yield more profits, and bigger bonuses. Nobody had any incentive to worry about whether those securities would “blow up.” Too much bonus money was at stake.”<sup>64</sup>

### Agency

The separation of ownership and control has long been recognized as a social problem for the capitalist economy, but the incentive structures of market fundamentalism make it more or less urgent. “Financial actors do not always bear the full consequences of their decision and therefore are liable to take (or impose) more risk than would otherwise seem reasonable. For example, financial institutions generally invest other people’s money and often enjoy asymmetric compensation incentives, which reward them for gains without penalizing them for losses.”<sup>65</sup> Stiglitz sees a powerful interaction between information, agency, incentive structures and conflicts of interest. Because of imperfect information, it is often difficult to make sure that an agent does what he is supposed to do. Because of the failure to align incentives, it is often the case that he does not.

### Conflicts of Interest

Conflicts of interest pervade the financial system. We have already mentioned, in the information discussion above, the critical problem that conflicts of interests involving credit rating agencies and investment banks played in the current financial crisis. But conflicts of interest can take many other forms as well.

When a single entity owns both an insured business (e.g. a commercial bank) and an uninsured business (an investment bank), or both regulated and unregulated subsidiaries that deal with each other, there is a powerful conflict of interest. Profit can be increased with imprudent loans by having the insured (regulated) entity, which is not supposed to get into risky lines of business, subsidize the uninsured (unregulated) ventures that do get into riskier businesses. Where management can enrich itself at the expense of stockholders, with gimmicks, such as improperly accounted stock options, there is a pervasive conflict of interest. The most prominent change in attitude toward potential conflict of interest was the decision to repeal the ban on comingling investment activities and commercial banking.

At the extreme, where agents not only pursue their interests at the expense of shareholders and the public, but also do so illegally, conflicts of interest become fraud. Fraud is not unique to market fundamentalism, but the institutional structure creates a fertile field for an endemic fraud problem. High stakes, lax oversight, creative accounting and a short-term perspective are conducive to fraud. The line between the illegal, immoral and ill-advised becomes blurred in this hothouse environment.

Given the structural conduciveness to fraud and the structurally induced race to the bottom in accounting and ethics, it is fair to argue that market fundamentalism has a uniquely endemic fraud/abuse problem. That said, it is important to recognize that the problem will not be solved just by attacking the illegal fraud. That must be done through enforcement, but public policy must address the underlying structures that give rise to and permit the fraudulent activity to become so pronounced. The catharsis of just throwing the criminals in jail and declaring victory will not suffice. It becomes a strategy to sidestep or avoid the more meaningful and fundamental reforms of market structure.

### Unfairness/Inequality

The five flaws in unregulated financial markets discussed above have been recognized as creating the potential for market failure in unregulated markets. The COP adds a sixth problem – unfairness, which it argues also contributes to the malfunctioning of the system. Unfairness in transactions, it argues, can starve the system of resources, raising costs and restricting activity. Unfairness involves two categories of problems.

Unfair dealings can be blatant, such as outright deception or fraud, but unfairness can also be much more subtle, as when parties are unfairly matched... If one party to a transaction has significantly more resources, time, sophistication, or experience, other parties are at a fundamental disadvantage... Unfair dealings affect not only the specific transaction participants, but extend across entire markets, neighborhoods, socioeconomic groups, and whole industries... As those consequences spread, the entire financial system can be affected as well... Unfairness... causes a loss of confidence in the marketplace.<sup>66</sup>

Unfairness in transactions not only threatens the flow of resources into the system, but it results in the misallocation of resources, as lenders take advantage of overmatched borrowers. The wrong people get loans at the wrong prices from the point of view economic efficiency. This conceptualization expands on the treatment of unfairness as an outcome of the market – inequality – i.e. we frequently see inequality as inequity; here we see it as inefficiency.

This broader conceptualization of the importance of unfairness/inequality as a supply-side issue fits the financial crisis in another sense, which is a demand side problem. The severe increase in inequality of income and resources that took place during the reign of market fundamentalism resulted in a failure of incomes to keep up with the rapid expansion of the production capacity of the economy and the rising cost of necessities – housing, education, health care, and energy – put severe stress on household budgets.<sup>67</sup> They plunge into debt to maintain their living standard.<sup>68</sup> Savings are too low, and concentrated wealth creates rampant speculation rather than productive investment in the real economy.<sup>69</sup> The tide may rise, but it does not lift all boats. Instead, the rip currents of inequality are so strong that the middle class is capsized and drowns in an ocean of debt. The supply-side and the demand-side of excessive inequality intersect in an inadequate national savings rate.

Each of these problems has been in evidence in the speculative bubble that afflicted commodity markets. Inadequately regulated markets hid information, as the Committee has shown in the Amaranth investigation and as we learned when the CFTC reclassified traders to show that the vast majority of activity in some of these markets was speculation. Perverse incentives riddle the structure, from the unidirectional interest of index traders, to the incentive of large traders to pump up volume to collect fees, as well as the creation of commodities as asset classes, which undermines the function of the market as an aid to the flow of physical goods. Conflicts of interest are strong where the large speculators hold assets and give advice, hyping the market up to increase the value of their assets. The escalation of price and volatility, which drove physical traders out of the markets, represented a basic unfairness and inequality that harmed small physical traders.

#### Other Flaws

In the financial sector moral hazard is a unique and prominent problem. In many sectors of the economy, we find other unique problems that challenge market fundamentalism's account of how the economy works. There are structural problems that lead to market failure, for which market fundamentalism does not have an adequate response. In commodity markets, particularly for energy commodities, there is another source of market failure in market structure – low elasticities of supply and demand, high barriers to entry, and the difficulty of storage. These accentuate the vulnerability to excessive speculation and market volatility.<sup>70</sup>

In the two and a half years between the end of 2005 and the middle of 2008, which I have identified as the period of the speculative bubble, speculation in oil alone has cost the economy about \$285 billion.<sup>71</sup> If we add in similar effects on natural gas, then the total reaches half a trillion dollars. This places a huge burden on household budgets. Average annual household expenditures on gasoline have increased by \$1200. For households in rural areas, the increase has been over \$1500 per year.

### PART III REGULATORY REFORM IS THE WAY TO SOLVE THE PROBLEM

In light of the inability of market fundamentals to explain commodity market gyrations and the collapse of market fundamentalism, it is time for policymakers to abandon the market fundamentalist view that sees regulation and antitrust as the *ex post* clean up after the occasional market failure, and to return to the New Deal view which understood that regulation is the *ex ante* prophylaxis to prevent market failure.

Too much money chasing too few goods in the commodity markets has created the upward spiral, amping up volume, increasing volatility and adding to risk. We must turn down the volume in commodity markets. Sound prudential regulation is the key to restoring order.

The failure of the CFTC to act responsibly in the past and the weak-kneed reaction to the dire crisis in commodity markets in the present ensure that Americans will continue to be the victims of excessive speculation. Congress must enact broad reforms that close the loopholes, remove the discretion that was given to the CFTC and compel it to do its job.

The policy prescriptions we derived from a proper understanding of the bubble, before it burst led us to recommend policy changes in five areas.<sup>72</sup> The proposals to reform prudential regulation in the wake of the financial meltdown have moved strongly in this direction. It is vital that reform of prudential regulation of commodity markets move in the same direction. Our recommendations bear repeating.

#### **Chase out the bad guys**

**All traders must register and be certified (for honesty and competence, like bankers and brokers).**

**All trading must be reported across all transactions**

The CFMA created a market in over the counter trading that is beyond regulatory scrutiny. These dark markets have played a prominent role in major manipulations. Without comprehensive registration and reporting, there will always be room for mischief that is out of sight to the regulator. Large traders should be required to register and report their entire positions in those commodities across all markets. Registration and reporting should trigger scrutiny to ensure the good character, integrity and competence of traders.

#### **Eliminate the funny money**

**Raise margin requirements**

**Increase capital reserve requirements**

We need to restore the balance between speculation and productive investment. Margin requirements on organized exchanges are a fraction of the margin requirements on stocks. If it is cheaper to put your money into speculation, why bother with real investment. The margin requirement for commodity trading among non-commercial traders should be fifty percent higher than the margin requirement for investment in stocks, but more lenient terms should apply to physical traders. Capital requirements should be increased to further reduce the amount of leverage in these markets and dampen excessive risk taking.

#### **Reduce the ability to push prices up**

**Lower position limits and tie position limits and margin policies to needs of physical traders**

**Lengthen settlement windows**

**Ban conflicts of interest (analyst's reports that enrich analyst's portfolios)**

Large position limits and short settlement periods invite efforts to influence prices. They should be reformed to reduce the risk. The practice of hyping prices by firms that stand to profit from the predictions should be banned.

**Restore the proper functioning of commodity markets and their regulators**

**Enforce meaningful speculative limits**

**Do honest analysis (classify traders correctly)**

**Close the loopholes (foreign boards of Trade exemptions, the Enron and swaps loopholes)**

**Create minimum criminal penalties for violation of commodity laws**

Public policy must return the futures markets to their function of supporting the operation of physical markets. Speculation should not be allowed to dominate these markets, and limits should ensure that genuine commercial traders are a substantial majority of the market by imposing strict speculative limits. Traders must be properly classified to ensure this outcome.

We must not only close the Enron-loophole, which allowed vast swathes of trading to take place with no oversight, but also ensure vigorous enforcement of registration and reporting requirements. We must take back the authority we have given to foreign exchanges and stop abandoning authority to private actors.

Failure to comply should result in mandatory jail terms. Fines are not enough to dissuade abuse in these commodity markets because there is just too much money to be made.

**Redirect investment to productive long-term uses**

**Put a tax on short-term capital gains**

**Move pension funds out of speculation**

**Ban institutional index funds**

We must level the playing field between long-term productive investment and short-term speculative gains, with a tax on short term capital gains between 33 and 50 percent to make holding productive investments for long periods as attractive as flipping short term financial paper.

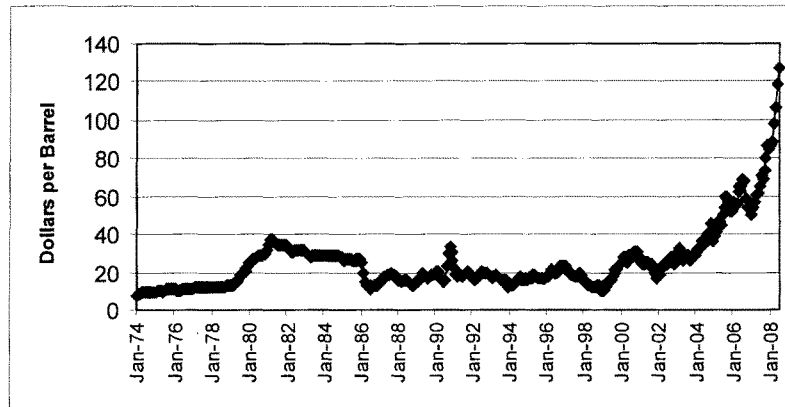
Speculators will insist that they will just go abroad, but the Congress need not fear such an outcome. If the U.S. is determined to assert jurisdiction over trading in the U.S. and

for U.S. commodities, foreign exchanges will comply. To survive they desperately need to have access to legal instruments for U. S. traded commodities. Individuals may chose to become expatriates and move to countries that chose not to comply, or they may break the law, but vigorous enforcement will put a stop to it. I suspect that the vast majority of traders do not want to live in places like Zimbabwe or Leavenworth, Bangladesh or Sing Sing.

If we do not do more than the halfhearted approaches that are on the table, we will continue to lurch from crisis to crisis. American consumers are suffering needlessly from this speculative bubble in vital necessities. It is time for thorough reform and re-regulation of the financial commodity markets.

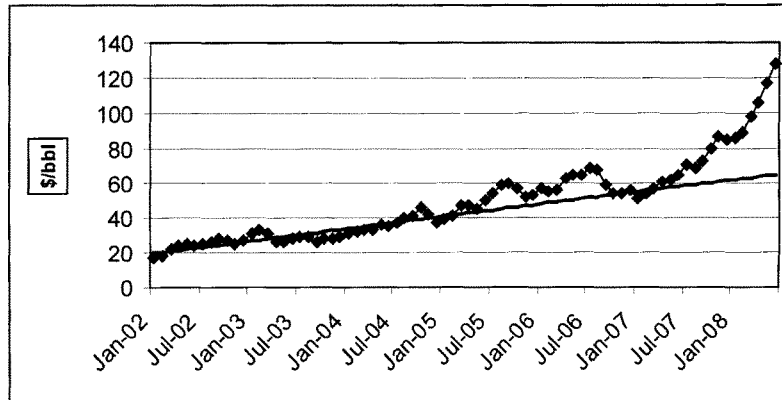
## EXHIBITS

EXHIBIT 1:  
LONG TERM TREND OF CRUDE OIL PRICES



Source: Energy Information Administration, database, *Refiner Acquisition Cost of Crude*.

EXHIBIT 2:  
CRUDE PRICES COMPARED TO TREND LINE (1/2002-1/2005)

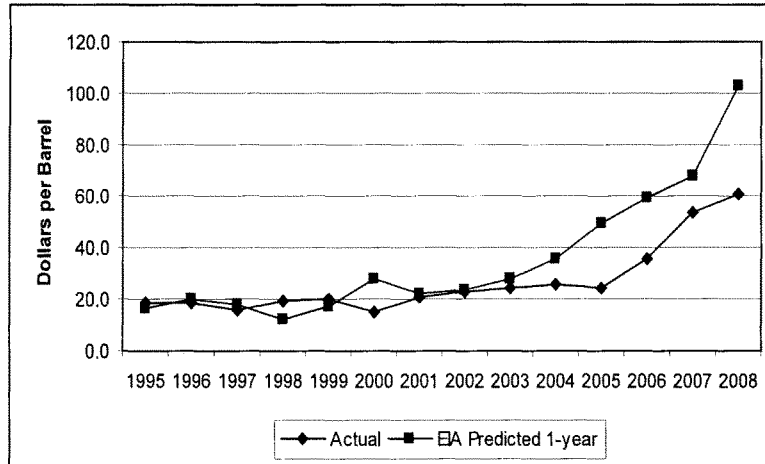


Source: Energy Information Administration, database, *Refiner Acquisition Cost of Crude*.

EXHIBIT 3:

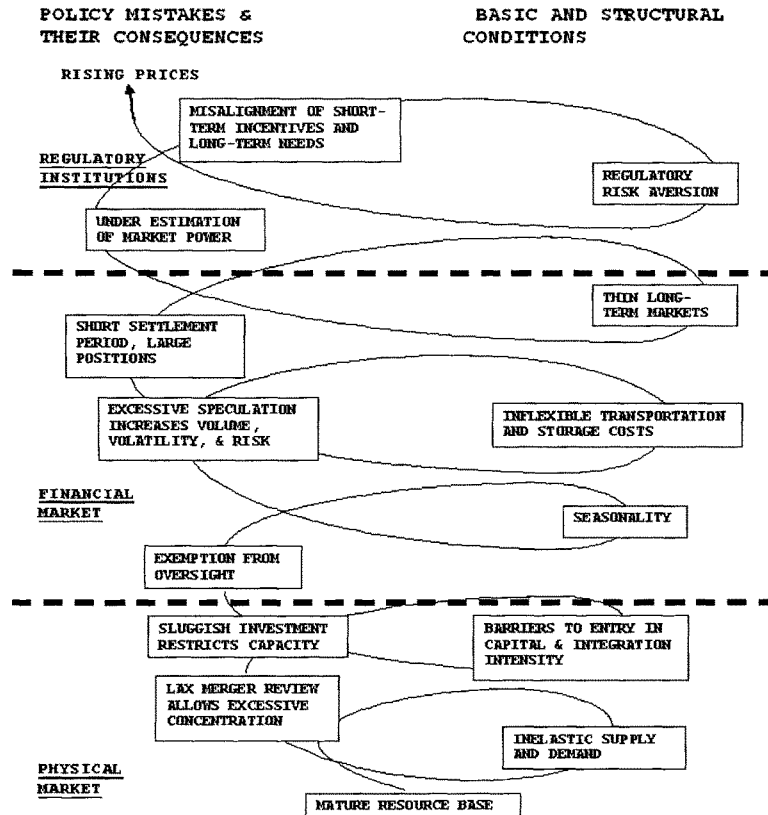


**EIA CRUDE OIL PRICE PREDICTIONS (1-YEAR FORWARD) COMPARED TO ACTUAL PRICES**



Source: Energy Information Administration, *Annual Energy Outlook: Retrospective Review, Evaluation of Projections in Past Editions (1983-2006)*, *Annual Energy Outlook, 2006*, *2007*, *2008*. *Landed Cost of Crude*, is used for actual cost.

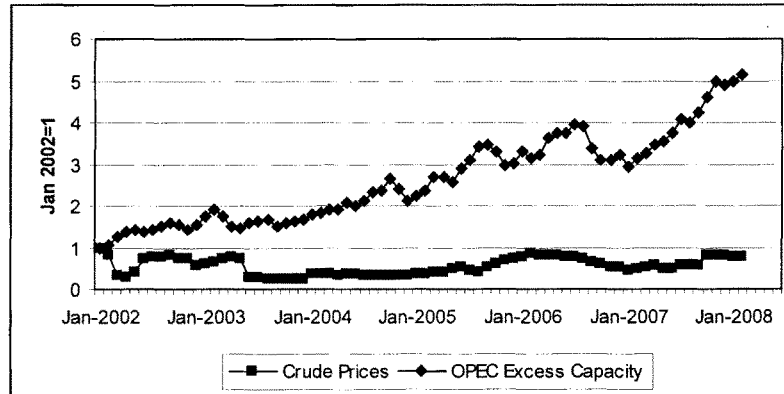
EXHIBIT 4:  
PHYSICAL, FINANCIAL AND REGULATORY FACTORS IN THE ENERGY PRICE SPIRAL



Source: Mark Cooper, "The Failure of Federal Authorities to Protect American Energy Consumers from Market Power and Other Abusive Practices," *Loyola Consumer Law Review*, 19:4 (2007), p. 318.

EXHIBIT 5:

## OPEC EXCESS CAPACITY COMPARED TO THE PRICE OF CRUDE

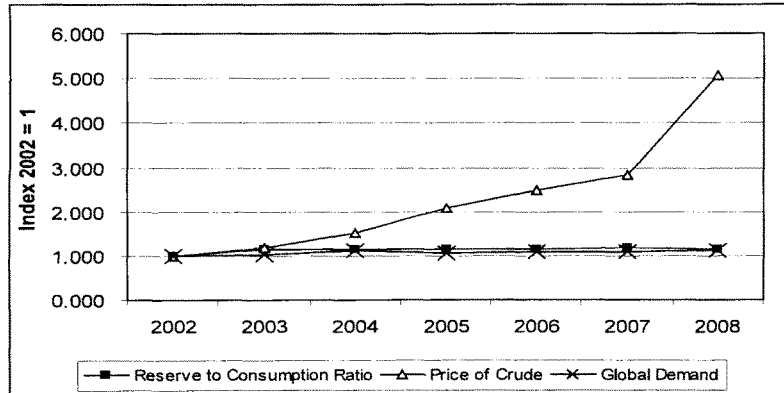


Source: Energy Information Administration, database, *Refiner Acquisition Cost of Crude, International: World Oil Balance, Short Term Energy Outlook – OPEC Oil Production Capacity*.

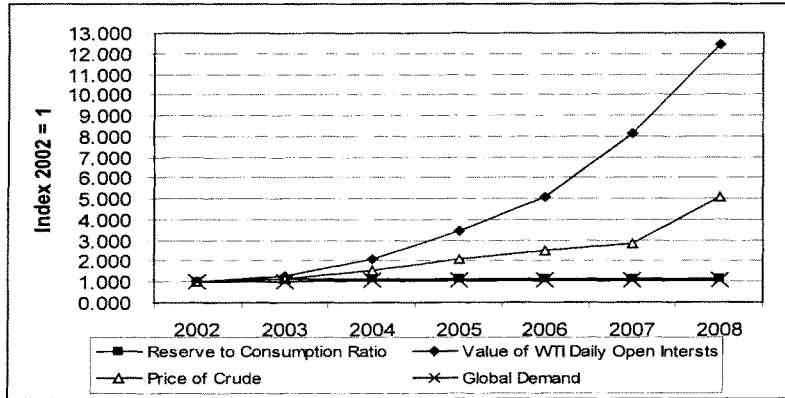
EXHIBIT 6:

## LONG-TERM FUNDAMENTALS:

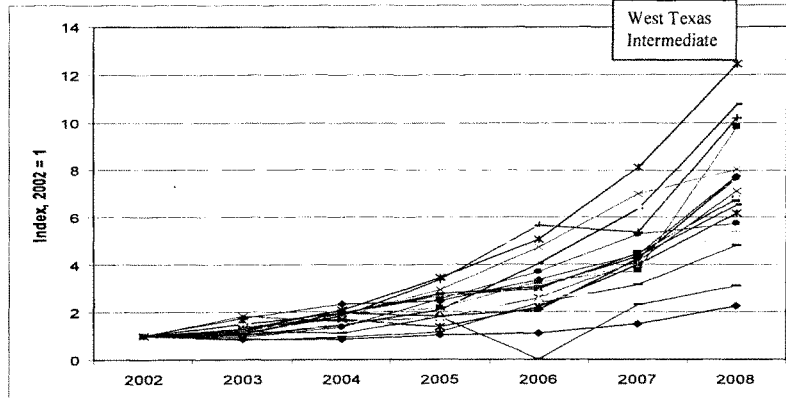
## GLOBAL DEMAND AND RESERVE TO CONSUMPTION RATIO, COMPARED TO PRICE OF CRUDE



Source: Energy Information Administration, database, *Refiner Acquisition Cost of Crude, International: World Oil Balance, Short Term Energy Outlook – OPEC Oil Production Capacity*.

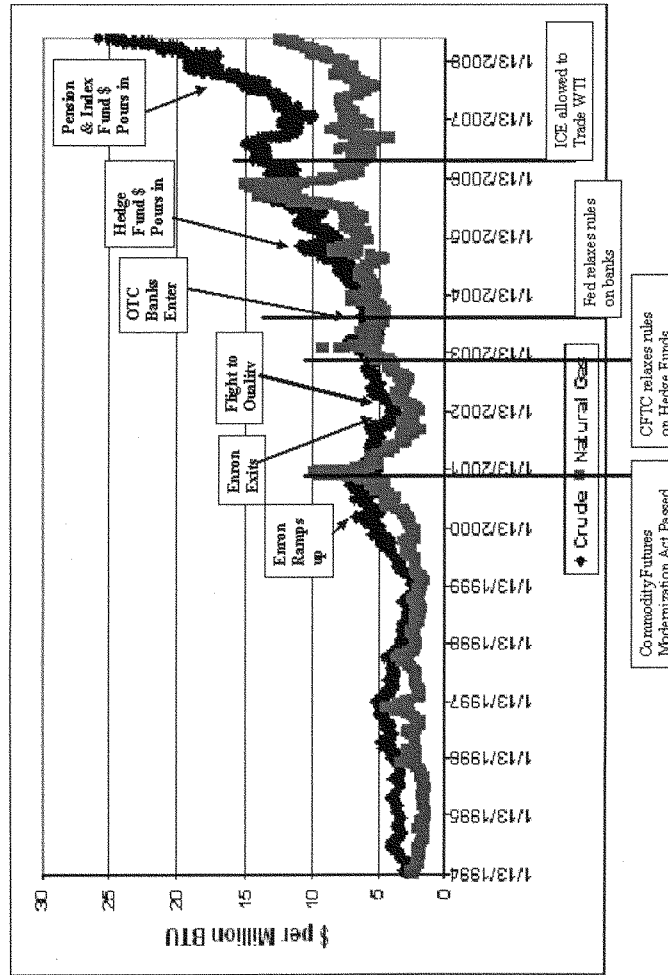
**EXHIBIT 7:****AVERAGE DAILY VALUE OF OPEN POSITIONS ON WEST TEXAS INTERMEDIATE, CRUDE PRICES, LONG-TERM FUNDAMENTAL (RESERVES AND DEMAND)**

Source: EIA, Refiner Acquisition Cost of Crude, International: World Oil Balance, Short Term Energy Outlook – OPEC Oil Production Capacity. Testimony of Michael Masters, Managing Member/Portfolio Manager, Masters Capital Management, LLC, Committee on Homeland Security and Governmental Affairs, United States Senate, May 20, 2008, Note 16 for WTI Open positions.

**EXHIBIT 8:****AVERAGE DAILY DOLLAR VALUE OF OPEN INTEREST: 20 INDEX COMMODITIES**

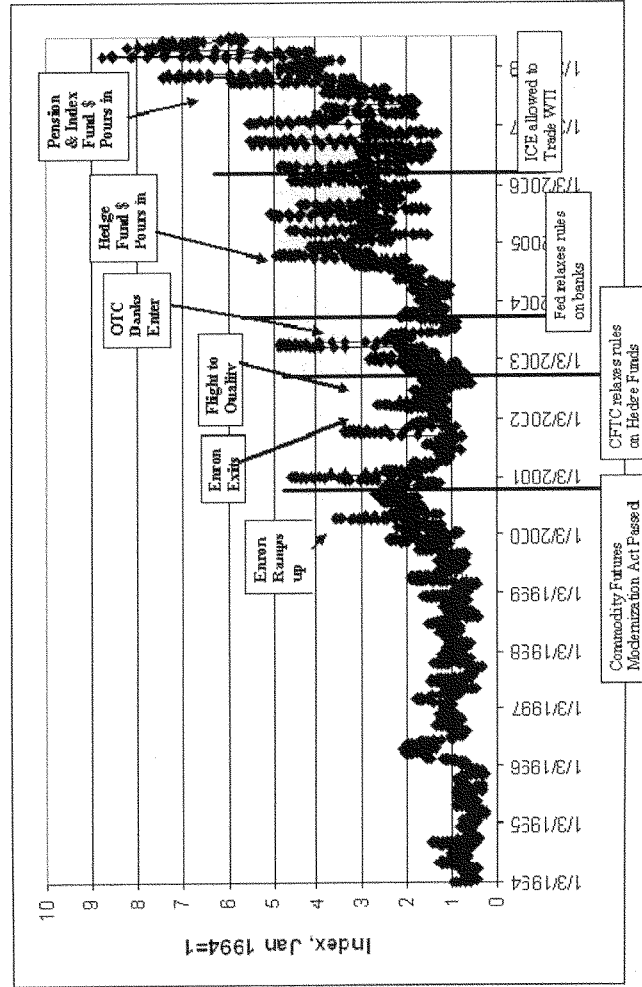
Testimony of Michael Masters, Managing Member/Portfolio Manager, Masters Capital Management, LLC, Committee on Homeland Security and Governmental Affairs, United States Senate, May 20, 2008, Note 16.

EXHIBIT 8:  
ENERGY SPOT PRICES, DEREGULATION AND CHANGES IN TRADING ACTIVITY



Source: Energy Information Administration, Database and Mark Cooper, *The Role of Supply, Demand and Financial Commodity Markets in the Natural Gas Price Spiral*, p. 8.

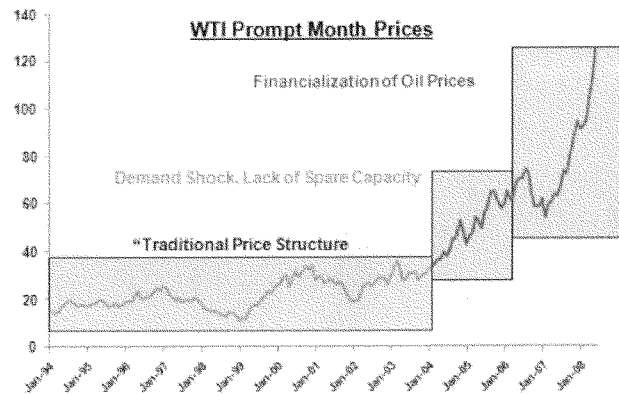
EXHIBIT 9:  
SPOT PRICE VOLATILITY DEREGULATION AND CHANGES IN TRADING ACTIVITY  
(30-DAY MOVING AVERAGE OF THE STANDARD DEVIATION OF THE DAILY SPOT PRICE)



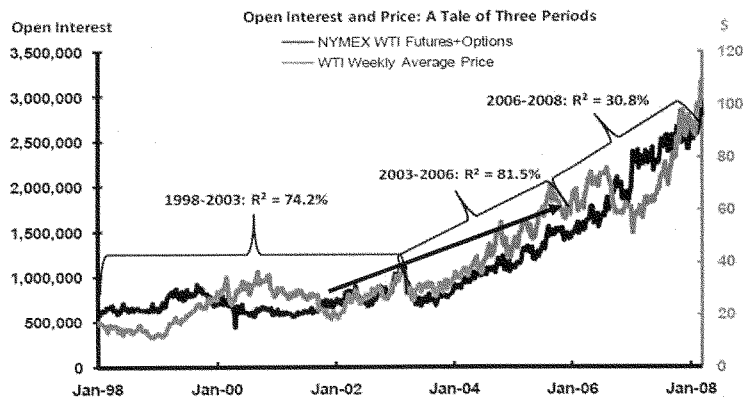
Source: Energy Information Administration, Database and Mark Cooper, *The Role of Supply, Demand and Financial Commodity Markets in the Natural Gas Price Spiral*, p. 8.

Exhibit 10:

## Oil Prices and Structural Trends



The Energy Channel: How Energy Markets Work - Page 2

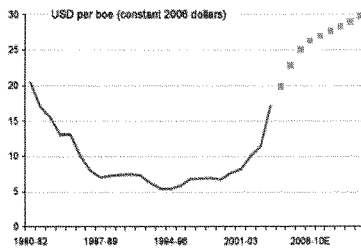


Source: "Testimony of Roger Diwan Regarding Energy Speculation: Is greater Regulation Necessary to Stop Price Manipulation," Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, U.S. House of Representatives, June 23, 2008, pp. 2, 8

Exhibit 11:

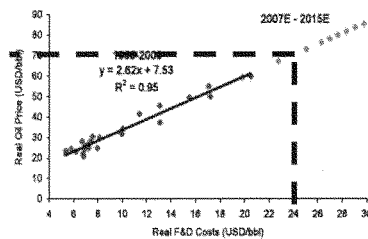
### What Does It Cost to Find a Barrel?

#### Worldwide Finding Costs (USD/bbl)



Source: DOE/EIA, Author

#### Oil Prices & Finding Costs Are Related



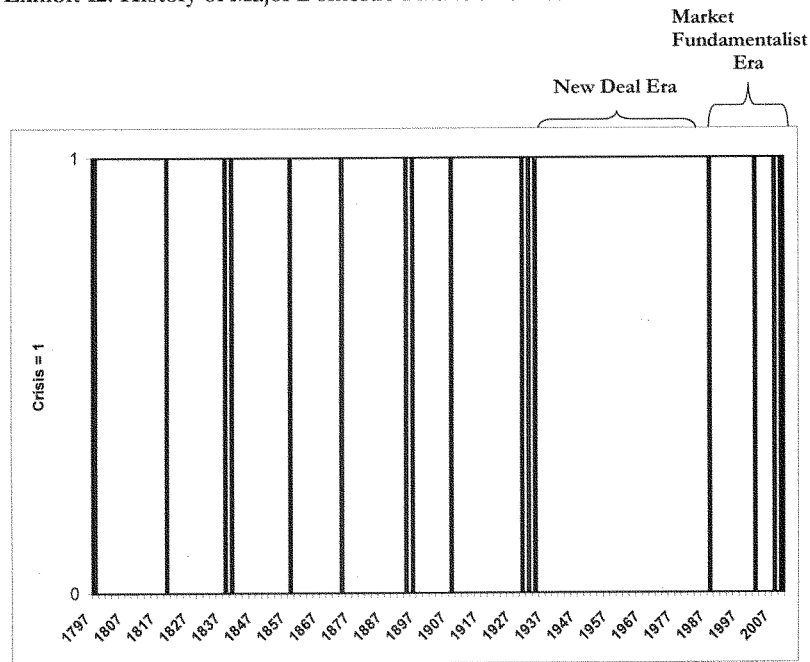
#### Outlook

- We estimate that finding and development costs have risen 20% per annum in real terms over the 2006 to 2008 period, and slower rates after that. This implies that F&D costs are likely to hit USD25/bbl in 2009 and possibly USD30/bbl in 2015.
- F&D costs have tended to be closely related to the oil price. Since 1980 we find that the oil price has tended to equal to 2.6x F&D costs plus USD7.5. This multiplier take into account taxes and gross margin.
- To get oil to USD200/bbl on a cost basis seems like a stretch- F&D costs of USD40/bbl and a multiplier of 5x, however USD80/bbl in the 2012-13 timeframe is very consistent with this data and USD100/bbl oil is possible.

Testimony of Adam Sieminski, Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, U.S. House of Representatives, June 23, 2008, p. 7.



Exhibit 12: History of Major Domestic Financial Crises

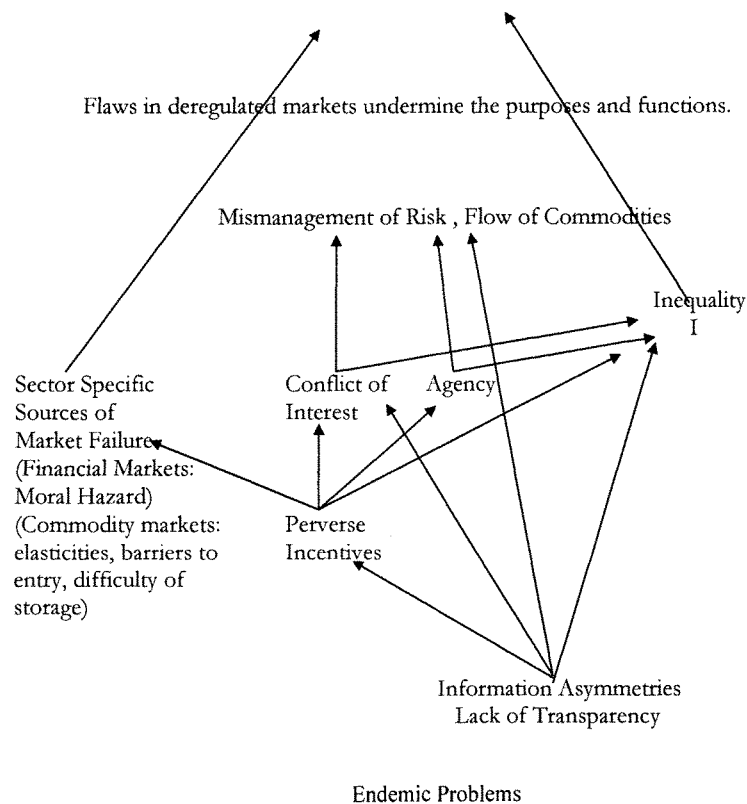


Sources: Congressional Oversight Panel, *Special Report on Regulatory Reform*, January 29, 2009.

**Exhibit 13:**  
**Institutional Weakness and Behavioral Flaws in Deregulated Financial Markets**

The purpose and function of a healthy financial system is to channel savings and investment into economic activity; efficiently allocating capital and risk is indispensable to any successful economy.

The purpose and function of a healthy commodity market is to facilitate the planning and flow of commodities between producers and users



**Exhibit 14: Conditions for Asset Bubbles**

		Distribution of Information	
		Perfect	Imperfect
Investor Behavior	Perfect	Bubble not Possible	Bubble Possible
	Bounded Rational or Irrational	Bubble Possible	Bubble Possible

## ENDNOTES

<sup>1</sup> Senate Permanent Subcommittee on Investigations, Committee on Homeland Security, *The Role of Market Speculation in Rising Oil and Gas Prices: A Need to Put the Cop Back on the Beat* (June 27, 2006).

<sup>2</sup> Senate Permanent Subcommittee on Investigations, Committee on Homeland Security, *Excessive Speculation in the Natural Gas Market* (June 25 and July 9, 2007).

<sup>3</sup> Mark Cooper, *The Role of Supply, Demand and Financial Commodity Markets in the Natural Gas Price Spiral*, A Report Prepared for the Midwest Attorney General Natural Gas Working Group (Illinois, Iowa, Missouri, and Wisconsin (March, 2006); *The Role of Supply, Demand, Industry Behavior and Financial Market in the Gasoline Price Spiral* (for the Wisconsin Attorney General, August, 2006).

<sup>4</sup> "Energy Market Manipulation and Federal Enforcement Regimes," Committee On Commerce, Science And Transportation, United States Senate, June 3, 2008.

<sup>5</sup> This section is drawn from "Testimony of Mark Cooper on Excessive Speculation In Energy Commodities," Agriculture Committee, United States House of Representatives, July 10, 2008

<sup>6</sup> Paul Krugman, "Fuel on the Hill," *New York Times*, June 27, 2008; Joe Nocera, "Easy Target, But Not the Right One," *New York Times*, June 28, 2008, p. B8; Sebastian Mallaby, "Nixonian Fallacy," *Washington Post*, June 30, 2008; Robert J. Samuelson, "Who's Behind High Prices," *Washington Post*, July 1, 2008.

<sup>7</sup> J. Stephen Simon, Senior Vice President ExxonMobil, Select Committee on Energy Independence and Global Warming, put the cost at \$50-\$55. John Hofmeister, President of Shell Oil Co. put the cost at \$35-\$60 per barrel. John Lowe, Executive Vice President of ConnocoPhillip, put the figure at \$90 per barrel, which appears to include OPEC cartel rents. Adam Siemiski's Testimony Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, U.S. House of Representatives, June 23, 2008, p. 7, suggests a cost of \$70, at the margin.

<sup>8</sup> We do not condone OPEC's illegal management of supplies to create cartel rents and support policies to counteract that rent collection.

<sup>9</sup> Akira Yanagisawa, *Decomposition Analysis of the Soaring Crude Oil Prices: Analyzing the Effects of Fundamentals and Premium* (Institute of Energy Economics, March 2008), p. 5, "According to the METI paper, during the second half of 2007, when the physical price of West Texas Intermediate crude averaged \$US90 a barrel, market speculation, geopolitical risk and currency factors were responsible for \$US30-\$US40 of the price." The average WTI "fundamental price," consistent with the underlying supply/demand situation, was around \$US60/barrel during the December half-year, according to the paper, citing research for the Institute of Energy Economics in Japan

<sup>10</sup> EIA, *NEMS International Energy Module (IEM): Model Documentation Report*, p. 2, "To summarize the model searches for a world price of oil compatible with supply-demand equilibrium in each region. Non-OPEC world demand and supply are determined by a set of price-quantity relationships, and in equilibrium the difference between world demand and non-OPEC world supply equals OPEC production. OPEC production is determined by an exogenously specified output path. Output of a price run includes forecast of the world oil price, OPEC production, world petroleum production and consumption, net imports by regions OPEC revenue, and spare OPEC capacity."

<sup>11</sup> Krugman, p. A19, "Regulating futures markets more tightly isn't a bad idea, but it won't

bring back the days of cheap oil. Nothing will. Oil prices will fluctuate in the coming years – I wouldn't be surprised if they slip for a while as consumers drive less, switch to more fuel efficient cars and so on – but the long-term trend is surely up. Most of the adjustments to high oil prices will take place through private initiative, but the government can help the private sector in a variety of ways, such as helping develop alternative technologies and new methods of conservation and expanding the availability of public transit.

<sup>12</sup> Yanagisawa, Siemiski, "Testimony of Roger Diwan Regarding Energy Speculation: Is greater Regulation Necessary to Stop Price Manipulation," Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, U.S. House of Representatives, June 23, 2008; Testimony of Michael Masters, Managing Member/Portfolio Manager, Masters Capital Management, LLC, Committee on Homeland Security and Governmental Affairs, United States Senate, May 20, 2008; "Testimony of Fadel Gheit," Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, U.S. House of Representatives, June 23, 2008; Thomas Evans, Citi Futures Perspectives, July 3, 2008; Lehman Brothers, *Oil Cot-com*, May 29, 2008.

<sup>13</sup> See Cooper, Natural Gas, Chapter IV.

<sup>14</sup> Hans R. Dutt and Lawrence E. Harris, "Position Limits for Cash-Settled Derivative Contracts," *The Journal of Futures Markets*, 25 (2005), p. 497, "Even when the settlement of cash-settled contracts are not purposefully manipulated, the settlement mechanisms may increase underlying volatility when hedgers unwind their hedges if they have no incentive to control their trading costs. This generally is the case when hedgers trade out of their positions at the same price that determine the final cash settlement price." Robert J. Pyndyk, "The Dynamics of Commodity Spot and Futures Markets: A Primer," *The Energy Journal*, 22(2001), p. 12, emphasis in original, "Increased volatility increases the value of producers' operating options, options to produce now (as an "exercise price" equal to the marginal production cost and with a "pay-off" equal to the spot prices), rather than waiting for possible increases or decreases in price. These options add an opportunity cost to current production: namely the cost of exercising the option rather than preserving them. This increase in volatility increases the opportunity cost of current production." Although Stephen Craig Pirrong, *The Economics, Law and Public Policy of Market Power Manipulation* (Boston, Kluwer, 1996), focuses on market manipulation, the conditions that facilitate manipulation also facilitate excessive speculation, particularly with the influx of new money, "[B]y demanding excessive deliveries a long induces distortion in the spatial and temporal distribution of consumption, transportation and storage. Shorts must pay current owners of the commodity increasingly higher prices in order to compensate current owners of the commodity for the surplus foregone. pp. 24-25). "[A] trader who does not possess any informational advantage is able to acquire market power as long as the flow of orders from other traders to the futures market is sufficiently volatile and large relative to the size of deliverable supply... Put another way, the existence of "nose traders" makes fraud possible." (p. 12)

<sup>15</sup> Nelson C. Schwartz, "Asleep as the Spigot," *New York Times*, July 6, 2008, Business Section, p. 7.

<sup>16</sup> Mallaby, p. A11

<sup>17</sup> Krugman, p. A19.

<sup>18</sup> Samuelson, p. A11.

<sup>19</sup> EIA, *Annual Oil Market Chronology*, provides a chronology of OPEC's supply management policies.

<sup>20</sup> Cooper, Oil, chapter II. The current controversy over tens of thousands of idle leases, while oil companies "hold out" for more attractive leases, even though high prices make them all worth

working, highlights an important issue. The claim that a lack of drilling resources makes it impossible to exploit the leases only proves the point that the current prices are excessive on the supply side. If we face a vertical supply curve in a classic economic welfare analysis, then price increases result in pure wealth transfers from consumers to producers and do not contribute to efficiency. Consumers did respond to the price increases in 2002-2006, as demonstrated by a CBO study (Congressional Budget Office, *Effects of Gasoline Prices on Driving Behavior and Vehicle Markets*, January 2008), but the elasticity is quite low on the demand side as well. A near vertical demand curve means that price increases result in huge wealth transfer from consumers to producers and small efficiency gains.

<sup>21</sup> Nocera, B8, "But remember, Enron was manipulating electricity prices, no oil, which was possible mainly because electricity cannot be stored." By getting power plants to shut down for hours at a time, Enron was able to create artificial shortages and jack up the price.

<sup>22</sup> Mallaby, p. A11. Every paper claim they buy is a paper claim they will later sell because they have no intention of converting their paper into real oil stocks. Oil is too expensive and cumbersome to store. A speculator is not going to show up in Cushing, Okla., when his futures contract matures and drive away with a tanker truck full of oil

<sup>23</sup> Goldman Sachs, *Global: Energy: Oil, \$100 Oil Reality, part 2: Has the Super-Spike End Game Begun?*, May 5, 2008; Morgan Stanley, *Commodity Shipping: Current Crude Oil Shipping Patterns Suggest \$150/bbl WTI by July 4<sup>th</sup>*, June 5, 2008.

<sup>24</sup> Robert J. Samuelson, p. A11.

<sup>25</sup> Nocera, p. B8.

<sup>26</sup> Nocera, p. B8.

<sup>27</sup> This section draws from Mark Cooper "The Failure Of Market Fundamentalism: What Are The Issues In The ICT Sector? The New Economics of ICT: Implications of Post-Neoclassical Economics for the Information Communications Technology Sector, Columbia University, March 20, 2009; Mark Cooper and Barbara Roper, *Reform of Financial Markets: the Collapse Of Market Fundamentalism and the First Steps to Revitalize the Economy*, April 2009; Mark Cooper, "State Regulators, Commodity Markets, And The Collapse Of Market Fundamentalism, Joint Session of the Consumer Affairs and Gas Committees on "Excessive Speculation in Natural Gas Markets: How To Safeguard Consumers," National Association of Regulatory Utility Commissioners, February 17, 2009; "Testimony of Dr. Mark Cooper Too Big to Fail? The Role of Antitrust Law in Government-Funded Consolidation in the Banking Industry," Subcommittee on Courts and Competition Policy, Committee on the Judiciary, United States House of Representatives, Marc 17, 2009.

<sup>28</sup> Susan Strange, *Casino Capitalism*, 1986.

<sup>29</sup> Dan Krier, *Speculative Management* (State University of New York Press: New York, 2005); Robert Shiller, The Taming of "Speculative Capitalism," *Japan Times*, April 2007.

<sup>30</sup> Roubini: Anglo-Saxon model has failed," *FT.com*, February 29, 2009. <http://www.ft.com/cms/s/0/89829f7a-f1d1-11dd-9678-0000779fd2ac.html>

<sup>31</sup> Stiglitz, *The Roaring Nineties* (New York: Norton, 2003).

<sup>32</sup> George Soros, *The New Paradigm for Financial Market* (New York: Public Affairs Press, 2008).

<sup>33</sup> Robert Pollin, *Contours of Descent* (New York: Verso, 2005), pp. 12-13 points out the contradictory outcomes of market fundamentalism, noting that under the neoliberal market system "two simple market forces, self-interest and competition, are wellsprings for the prodigious of effort and material abundance that are so evident in the United States and other advanced capitalist

countries. However, if free market capitalism is a powerful mechanism for creating wealth... a neoliberal policy approach... also produces severe difficulties in terms of inequality and financial instability, which in turn diminishes the market mechanism's ability to even promote economic growth."

<sup>34</sup> Pollin, *Contours* (p. 13), identifies "three fundamental problems that result form a free market system," which correspond roughly to the three market fundamentalist hypotheses. The efficient market hypothesis is closest to what he calls the Keynes problem, which identifies both the problem of the business cycle and the problem of speculation: "In a free market economy, investment spending by business is the main driving force that produces economic growth, innovation and jobs. But... spending by business is likely to fluctuate... when financial market convert long-term assets into short-term commitments for investors, this also fosters a speculative mentality in the markets. What becomes central for the investor is not whether a company's products will produce profits over the long-terms, but rather whether the short-term financial market investors *thing* a company's fortunes will be strong enough in the present and immediate future to drive the stock price up. Because of this, the financial market is highly susceptible to rumors, fads and all sorts of deceptive account practices, since all of these can help drive the stork price up in the present, regardless of what they accomplish in the longer term.

<sup>35</sup> Greg IP and John D. McKinnon, "Bush Reorients Rhetoric, Acknowledges Income Gap," *Wall Street Journal*, March 26, 2007, "top White House economic officials still don't consider today's inequality - the growing share of income going to those at the top - an inherently bad thing; they believe it simply reflects the rising rewards accruing to society's most skilled and productive members." IN contrast to the view that inequality does not matter, Pollin, *Contours*, identified a second problem in market economies (p. 13) which involved the fact that " in a free market economy generally, workers have less power than employers in this bargaining process because workers cannot fall back on other means of staying alive if they fail to get hired in a job... unless some non-market forces in the economy, such as government regulations or effective labor unions, are able to counteract these market processes, workers will continue to experience weakening bargaining strength and eroding living standard (Pollin, *Contours*, pp. 13...14.

<sup>36</sup> A third fundamental problem identified by Pollin, *Contours*, p. 16-17, is "that for market economies to function with some modicum of fairness, they must be embedded in social norms and institutions that effectively promote broadly accepted notions of the common good... [which] argued in favor of government interventions to achieve three basic ends: stabilizing overall demand in the economy at a level that will provide for full employment; crating a financial market that is stable and conducive to the effective allocation of investment funds; and distributing equitably the rewards for high employment and a stable investment process.

<sup>37</sup> Tim Shaffer, "Paul Krugman's Depression Economics," *Reuters*, December 8, 2008, quoting Krugman, "Well, we have about 60 years of financial stability, basically because we had an effectively regulated banking system. Then we fell prey to a combination of excessive optimism and excessive literalism. We started believing that financial markets always work, and we also believed that everything was OK as long as things we call banks were guaranteed, not realizing that lots of things we don't call banks are nonetheless subject to bank runs.

<sup>38</sup> "Roubini: Anglo-Saxon model has failed," *FT.com*, February 29, 2009. <http://www.ft.com/cms/s/0/89829f7a-f1d1-11dd-9678-0000779fd2ac.html>

<sup>39</sup> Stiglitz, *Roaring Nineties*.

<sup>40</sup> Congressional Oversight Panel issued a *Special Report on Regulatory Reform*, Washington, D.C., January 29, 2009.

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<sup>41</sup> "The Financial Crisis and the Role of Federal Regulators," Committee on Oversight and Government Reform, U.S. House of Representative, October 23, 2008.

<sup>42</sup> George Cooper, *The Origin of Financial Crises: Central Banks, Credit Bubbles and the Efficient Market Fallacy* (New York: Vintage, 2008).

<sup>43</sup> Michael Lewis, "The End," *Portfolio Magazine*, December 2008.

<sup>44</sup> Andy Kessler, "The Demise of a Giant Hedge Fund," *The Weekly Standard*, October 13, 2008.

<sup>45</sup> Soros, *Super Bubble*, p. 77. Market fundamentalists blame market failures on the fallibility of the regulators, and they are half right: Both markets and regulators are fallible. Where market fundamentalists are totally wrong is in claiming that regulators ought to be abolished on account of their fallibility... The fact that regulators are fallible does not prove that markets are perfect. It merely justifies reexamining and improving the regulatory environment.

<sup>46</sup> Stiglitz, *Roaring Nineties*, p. 167, "The offenses of Enron and Worldcom – and of Citigroup and Merrill Lynch – put most acts of political crookedness to shame. The typical corrupt government official pockets a measly few thousand dollars – at most a few million. The scale of theft achieved by the ransacking of Enron, Worldcom, and other corporations in the nineties was in the billions of dollars – greater than the GDP of some nations.

<sup>47</sup> The Wikipedia definition of moral hazard also points out that several of the other flaws in the financial markets can be seen as different types of moral hazard: "Moral hazard is related to information asymmetry, a situation in which one party in a transaction has more information than another. The party that is insulated from risk generally has more information about its actions and intentions than the party paying for the negative consequences of the risk. More broadly, moral hazard occurs when the party with more information about its actions or intentions has a tendency or incentive to behave inappropriately from the perspective of the party with less information.... A special case of moral hazard is called a principal-agent problem, where one party, called an agent, acts on behalf of another party, called the principal. The agent usually has more information about his or her actions or intentions than the principal does, because the principal usually cannot perfectly monitor the agent. The agent may have an incentive to act inappropriately (from the viewpoint of the principal) if the interests of the agent and the principal are not aligned.

<sup>48</sup> COP Report, p. 3.

<sup>49</sup> COP Report, p. 13.

<sup>50</sup> The important role of the imperfect information occurs in several of Stiglitz's arguments: "For the stock market to function well, there needs to be accurate information about what a company is worth so that investors can pay the right price for its shares. By obfuscating the problems inherent in many of the companies they brought to the market or for which they helped raise capital by issuing shares, the banks contributed to the erosion of the quality of information. They were supposed to provide information to investors, to reduce the disparity between informed insiders and outsiders. Instead, asymmetries of information maintained or increased; in many cases, bankers and analysts knew the real state of affairs about the companies they worked with but the public did not. Confidence in the markets declined, and when the correct information came out, share prices declined sharply.

<sup>51</sup> Cooper, p. 112.

<sup>52</sup> Stiglitz, *Roaring Nineties*, p. 149, Investment houses became marketers. They did what it took to sell what they could sell.

<sup>53</sup> COP Report, p. 9.



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<sup>54</sup> COP Report, p. 9.

<sup>55</sup> Cooper, p. 105, "The combination of debt-financing and mark-to-market accounting conspire to give price movements in the asset markets a fundamentally unstable positive feedback characteristic."

<sup>56</sup> Stiglitz, *Roaring Nineties*, p. 143, "Deregulation enhanced the scope for conflicts of interest. It also had the advertised effect of increasing competition. In normal circumstances, increased competition is a good thing. But in the nineties, the banks became so eager for short-term profit that here was a race to the bottom. Each bank knew that its competitors were engaging in similar practices, and if it did not compete, it would be left behind; and each banking officer knew what that meant; small bonuses, perhaps even being fired.

There is good economic research that shows a direct tie between options compensation and an increase in accounting fraud.

<sup>57</sup> George Cooper, *The Origin of Financial Crises: Central Banks, Credit Bubbles and the Efficient Market Fallacy* (New York: Vintage), p. 60.

<sup>58</sup> Stiglitz, *Roaring Nineties*, p. 100.

<sup>59</sup> Stiglitz, *Roaring Nineties* p. 125.

<sup>60</sup> Stiglitz, *Roaring Nineties* p. 146-148.

<sup>61</sup> Krugman, *Return*, p. 149.

<sup>62</sup> Cited in Soros, p. 84.

<sup>63</sup> Michael Lewis and David Einhorn, "The End of the Financial World as We Know It," *New York Times*, January 4, 2009.

<sup>64</sup> Joe Nocera, "First, Let's Fix the Bonuses," *New York Times*, February 21, 2009, p. b8.

<sup>65</sup> COP Report, p. 10.

<sup>66</sup> COP Report, p. 3.

<sup>67</sup> Ip and McKinnon, "The typical worker's pay have grown only) .3%, adjusted for inflation, since the expansion began at the end of 2001 while the economy has grown by 16%. The share of total income going to the richest 1% of Americans rose to a postwar record of 17.4% in 2005... Even before Republican's November defeat at the polls, some administration allies were warning that economic insecurity was eroding Republican support. A business coalition hired pollster David Winston to figure out why voters remained so dissatisfied with the economy. His focus groups of middle-income voters in Cincinnati and Pittsburgh found voters going deeper into debt to keep up with rising costs of health care and energy. Executive compensation "is getting to the point where it's obscene, said on focus group participant... But Republican strategists largely ignored the findings. Michael Lewis, "The End," cites the ratio of median home price to income" as "a measure of sanity in housing prices." Noting that it had increased from 3-to-1 to 4-to-1 and was as high as 10-to-1 in the hot markets. Various aspect of household deficit spending are dealt with in a series of reports from the Levy Institute, see Edward N. Wolff, *Recent Trends in Household Wealth in the United States: Rising Debt and the Middle-Class Squeeze*, June 2007; Robert W. Parenteau, *U. S. Household Deficit Spending: A Rendezvous with Reality*, The Levy Economics Institute, 2007; Dimitri B. Papadimitriou, Edward Chilcote, and Gennare Zezza, *Are Housing Prices, Household Debt, and Growth Sustainable?*, the Levy Institute, January 2006.

<sup>68</sup> Robert K. Frank, "Why Wait to Repeal Tax Cuts for the Rich?", *New York Times*, December 7,

2008, p. 5, "A robust finding in behavioral research is that people are extremely reluctant to accept cutbacks in their standard of living."

<sup>69</sup> Joseph Stiglitz, "Capitalist Fools," *Vanity Fair*, January 2009, "The president and his advisers seemed to believe that tax cuts, especially for upper-income Americans and corporations, were a cure-all for any economic disease... The tax cuts played a pivotal role in shaping the background conditions of the current crisis. Because they did very little to stimulate the economy, real stimulation was left to the Fed, which took up the task with unprecedented low-interest rates and liquidity... The flood of liquidity made money readily available in mortgage markets, even to those who would normally not be able to borrow. And, yes, this succeeded in forestalling an economic downturn; America's household savings rate plummeted to zero. But it should have been clear that we were living on borrowed money and borrowed time. The cut in the tax rate on capital gains contributed to the crisis in another way. It was a decision that turned on values: those who speculated (read: gambled) and won were taxed more lightly than wage earners who simply worked hard. But more than that, the decision encouraged leveraging, because interest was tax deductible."

<sup>70</sup> The Failure of Federal Authorities to Protect American Energy Consumers From Market Power and Other Abusive Practices," *Loyola Consumer Law Review*, 19:4 (2007).

<sup>71</sup> "Testimony of Mark Cooper on Excessive Speculation In Energy Commodities," Agriculture Committee, United States House of Representatives, July 10, 2008

<sup>72</sup> "Testimony of Mark Cooper, Oversight of Energy Markets and Oil Futures Contract," Joint Hearing of the Senate Appropriations Subcommittee on Financial Services and General Government and The and the Committee on Agriculture, Nutrition and Forestry United States Senate, June 17, 2008

**Testimony of Steven H. Strongin**  
**Managing Director**  
**Goldman, Sachs & Co.**  
**Permanent Subcommittee on Investigations**  
**Committee on Homeland Security and Governmental Affairs**  
**U.S. Senate**

July 21, 2009

**A. Executive Summary:**

Chairman Levin, Ranking Member Coburn, and Members of the Subcommittee, we commend you for your leadership in addressing the factors affecting the integrity and functioning of commodity markets, which we view as a critical endeavor. We appreciate the opportunity to present our thoughts on the recently released Subcommittee report entitled, "Excessive Speculation in the Wheat Market." This is a substantial piece, which provides a rich and detailed history of the wheat market and raises critical issues, such as the importance of price convergence between the cash and futures markets.

I have been involved with commodity markets for the last 15 years, having helped construct and manage commodity index products for much of that time. I served as a member of the Policy Committee for the Goldman Sachs Commodities Index (GSCI) from 1996 to 2007, at which time the index was sold to Standard & Poor's and became the S&P GSCI™. I have continued to serve on the Policy Committee maintained by S&P.

When we first conceived of the GSCI, we did so with an eye toward improving liquidity in the commodity markets by helping fill the gap between the large number of commodity producers who wish to hedge their risk, and the more limited number of consumers who are willing to provide those hedges (as the Subcommittee report discusses). Since the inception of the GSCI, passive investments in commodity markets have been a crucial source of this liquidity. Yet, investors who have provided this liquidity have been, in our opinion, inappropriately characterized as speculators with no real economic interest in these markets, and the growth in index investment seen as creating an imbalance rather than correcting one.

In fact, most of these investors are large-scale asset allocators who seek to invest in markets in which capital is in short supply. In doing so, they aim to earn a reasonable long-run return by improving the underlying economics of the industry. They therefore require real economic justifications for their investments and rarely invest based on short-term speculative market views.

Their primary concerns mirror those of this Subcommittee. Namely, what is the realistic capital need of these markets? Will investment distort prices and therefore reduce long-run returns? And are these markets liquid enough that prices will not be distorted by the allocation of passive capital? Reflecting these concerns, the Policy Committee of the GSCI sought to structure the Index so that it provides the greatest possible liquidity, with the least possible market impact from passive investments. It has regularly assessed whether capital allocated to individual contracts exceeds the ability of these markets to absorb that capital. We would stress, as does the Subcommittee report, that this capital is needed to balance these markets and allow them to fulfill their desired function of allowing producers and consumers to operate more efficiently and manage price risk well.

With this in mind, we would like to turn our attention to the specific concerns raised and recommendations made in the Subcommittee's report. As we mentioned earlier, this is a

substantive and detailed piece. But our work leads us to some very different conclusions from those reached in the report, with important implications for regulatory policy. We will briefly outline these key differences, and then delve into greater detail later. We hope our thoughts will prove useful:

- The Subcommittee report concludes that passive index investments have been responsible for price volatility in the Chicago Mercantile Exchange (CME) wheat market (or "Chicago Wheat"), but our analysis leads us to a different conclusion. As part of our ongoing testing of the GSCI, we look at this issue by comparing the price performance of Chicago wheat versus the performance of other agricultural markets without passive index investments. In those markets, we observe similar price moves. For example, wheat contracts not included in passive indices, such as Minneapolis wheat, have experienced even greater price volatility than Chicago wheat. We also look at this issue by looking at the performance of commodities that are subject to similar economics as Chicago wheat, such as rice and oats. Here we also find very similar price patterns. These analyses strongly imply that passive investments were not the cause of price distortions in the Chicago wheat market. Therefore, restrictions in passive investments would not likely have lessened price volatility.

We would note that our work on the impact of speculation shows that non-index speculation has had far more impact than passive index investment, both per dollar invested and in total. The reason for this is straightforward. Index investments are made slowly and predictably, and contracts are exited well before settlement. Non-index investments, however, tend to be strongly correlated with underlying fundamentals and they tend to be focused on price levels. Thus, their size is adjusted to passive index investments, offsetting the effects of those investments.

- The Subcommittee report also concludes that passive index investments impede price convergence between Chicago Wheat futures contracts and the cash market. We believe this is a very important issue. However, our view is that this lack of convergence is not due to index investments, but is instead driven by flaws in the design of the Wheat futures contracts. Put simply, the high degree of flexibility of delivery options for consumers built into Chicago futures contracts, and the difficulty of delivery into those contracts for producers, makes the futures more valuable than the underlying wheat. This is particularly true when the volatility of cash wheat prices is high. If we compare the value of those options with the basis volatility raised as a concern in the Subcommittee report, it becomes clear that it is contract design and not speculators that result in this basis risk.

The role of delivery restrictions, such as those in the Chicago Wheat contract, impeding price convergence between the futures and the cash market is something the Chairman and members of the Subcommittee have highlighted with respect to the crude oil market. We think the solution here should parallel suggestions made by the Subcommittee about crude oil. Namely, the number of delivery sites should be expanded and terms for delivery should generally be eased. The CME has already made some substantive adjustments to the delivery rules, several of which went into effect this month, but it is not yet clear whether these changes will be sufficient. It is clear, however, that changes in delivery procedures can fix the basis risk problem.

- The Subcommittee report also suggests that position limits or the elimination of index investing would reduce volatility in Wheat prices. Given our view that index investing did not cause price volatility or convergence issues, we do not think there will be much to gain by implementing such restrictions. However, there could be significant negative consequences:
  - First, a large number of index investors are based outside of the U.S. Given that there are equivalent contracts traded on non-U.S. exchanges, much of the activity generated by these investors would likely migrate offshore.

- Second, the proposals currently being suggested would not actually restrict the aggregate size of the positions taken by U.S. investors. Instead, these positions would likely be splintered across multiple brokers, ETFs and mutual funds, so that each of these vehicles would remain below their individual position limits. Under the kind of stressful market conditions that most concern this Subcommittee, such a splintering would likely lead to even greater market volatility. The sale of large positions in periods of market stress is a significant destabilizing market action. When these positions are in the hands of a single party or a small numbers of parties, their orderly sale is possible. When these positions are in the hands of multiple dealers, the rush to sell is stronger, as each dealer or fund manager is incentivized to sell before another. This is especially true for dealers running smaller trading books or for mutual funds and ETFs who compete for the best relative performance. For these participants, a faster sale is best. This can lead to very disorderly markets and extreme volatility in times of stress. Thus, it is our view that splintering existing positions could lead to greater price volatility and the likelihood that prices overshoot underlying fundamentals.

Attempts to regulate volatility have rarely – if ever – succeeded. Yet they often have unintended and significant consequences. As we look to the future, we think the harmful volatility that has been observed in many markets in the recent past begs us to focus on the question of “which types of market rules and oversights allow participants to best manage their risk at a reasonable cost?”

In sections B through F of this report, we delve into greater detail on the key areas of divergent opinion we highlighted earlier.

#### **B. The Role of Financial Participants in Commodity Futures Markets:**

As we have mentioned, the role of financial participants in the commodity futures markets is often, in our view, misunderstood. In this section of the report, we will present our thoughts on the important roles these participants play in these markets, and address some of the key misconceptions.

- **Index investors bear commodity price risk instead of producers**

One of the exceptional achievements of the commodity futures markets is the separation of the ownership of commodity price risk from the ownership of the physical commodity. That is, these markets allow participants to buy and sell the commodity price risk without requiring the exchange of the physical commodity.

This separation can create economic benefits. The producer - who by nature must hold the physical commodity - is no longer required to bear all of the risk of price fluctuations, against which it would need to hold expensive equity capital. Instead, the producer can shift this risk off of its balance sheet. This frees up expensive equity capital and allows the producer to focus on its core competency of operating its business, rather than the management of commodity price risk.

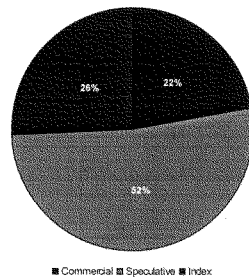
Index investors are remarkably well-suited to bear the commodity price risk that producers wish to shed. They are typically long-term investors with diversified portfolios of equities and bonds, such as pension funds and endowments. Commodity futures investments offer these investors an asset with an equity-like rate of return, but one that is not correlated with equity and bond returns, and therefore offers a good source of portfolio diversification. Further, commodity index investments provide greater protection from inflation, although the trade-off is greater exposure to the risk of economic

recessions. However, given that these investors have long-term investment horizons, they are best suited to bear this macroeconomic risk than are other investors.

By facilitating the transfer of commodity price risk from commodity producers, who would have to hold expensive equity capital against it, to long-term investors who are better able to hold that risk within their diversified portfolios, the participation of commodity index investors actually *lowers* the cost of managing commodity price risk.

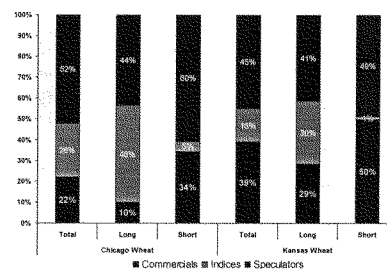
In this regard, the growth of commodity index investments has been a process of reducing a market distortion, rather than creating one. In fact, the creation of the commodity indices was driven by the need to supply capital to meet the hedging demands of commodity producers, which are typically far larger than the hedging demands of commodity consumers, creating a market imbalance. Commodity indices were conceived as a means to channel a supply of stable long-term capital to correct this imbalance (see Exhibit 1 and 2).

Exhibit 1: Wheat breakdown of total positions  
% of positions (positions = 2x open interest)



Source: CFTC; Goldman Sachs Global ECS Research

Exhibit 2: Wheat breakdown of total positions  
% of positions



Source: CFTC; Goldman Sachs Global ECS Research

While commodity index investments have grown, the size of the indices relative to the other market participants suggests that the market is balanced. In the Chicago wheat market, commodity index investors hold 22% of total long plus short positions, while speculators hold 52% and commercial participants 26%.<sup>1</sup> Because speculators - whose role is to maintain the balance between prices and fundamentals - continue to hold nearly 50% of the positions in the market, it becomes difficult for other participants to distort the market, as speculators can adjust their positions to compensate.

Further, the economic role of index investors in the commodity futures market is to supply a stable pool of passive, unleveraged capital to bear commodity price risk. By moving the commodity price risk from the physical producers to an investor better-suited to bear it, index investors lower the cost of capital for commodity producers by allowing them to hedge with a counterparty that is willing to bear the risk at a lower expected return. By lowering the cost of capital for these commodity producers, index investors allow producers to supply the physical commodity at a lower price over the long-term.

<sup>1</sup> Data are from the CFTC Commitments of Traders Report. See <http://www.cftc.gov>.

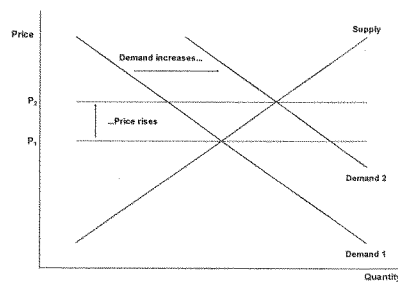
Consequently, even if the increase in index investment is driven by investors: (1) becoming more comfortable with commodities as an asset class, (2) perceiving commodities as less risky than they did before, and (3) being willing to hold commodity price risk at a lower expected return, the impact would be to drive physical commodity prices down - not up - over the long run.

- **Commodity indices are structured so that they don't create artificial demand**

Because financial participants are net buyers of commodity futures from producers, it is easy to view speculators and index investors as another type of consumer. And therefore to view their commodity futures purchases as another form of demand. The logical implication of this view is that purchases of commodity futures by speculators and index investors drive up commodity prices as any other form of demand would (see Exhibit 3).

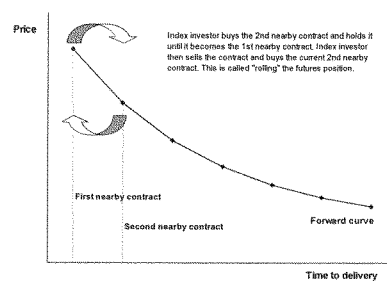
However, this view fails to recognize that speculators rarely – and index investors never – take physical delivery of the actual commodity, let alone consume it. Instead, all of the commodity futures contracts that speculators and index investors buy from producers (on net), are sold back to producers (on net) before supply ever meets demand in the physical market.

Exhibit 3: As physical demand increases, the pull on higher cost supply causes physical prices to rise  
Price (vertical axis), Quantity (horizontal axis)



Source: Goldman Sachs Global ECS Research

Exhibit 4: Commodity investors "roll" futures positions back out the forward curve instead of taking delivery  
Price (vertical axis), Time to delivery (horizontal axis)



Source: Goldman Sachs Global ECS Research.

In the case of index investors, this selling back of all commodity futures purchased before the time of delivery is built into the mechanical structure of the commodity index itself. For example, as of July 15, 2009 the S&P GSCI™ index holds Wheat futures for delivery in September of 2009. During the 5<sup>th</sup>-9<sup>th</sup> business days of August, the index will sell those September futures contracts and purchase contracts for delivery in December of 2009. This process is called "rolling" the futures positions. As we show in Exhibit 4, this process involves selling futures as their delivery time approaches and then buying new futures farther out on the forward curve. In this manner, index investor maintain their investments in Wheat futures at a fixed point on the forward curve, much like a bond investor seeking to maintain a constant maturity in his or her bond portfolio. By "rolling" their commodity futures positions in this way, index investors never take physical delivery of the commodity and so cannot be adding to physical demand.

**C. The Impact to Prices from Financial Market Participation in Futures Markets:**

- **Speculators support a more efficient price discovery process**

While index investors passively earn returns as payment for bearing the risk of commodity price fluctuations, speculators actively seek to earn profits by anticipating fluctuations in commodity prices. Speculators believe they can anticipate price fluctuations because they believe that their analysis and understanding of the market has provided them with a more informed view of future fundamentals. That is, they buy commodity futures when they believe the market has underestimated the tightness in forward fundamentals and sell when they believe the market has overestimated them.

Unlike the investor who seeks to reduce his risk through diversification and only earns a return for holding the remaining risk, if a speculative trader is to profit on his well-informed views, he must instead manage a concentrated risk exposure in the market where these views are most informed. The speculative trader will be willing to hold a larger position, and a greater concentration of risk, the greater he perceives the expected profit to be and the greater his confidence in his views.

Consequently, the more a speculator perceives the market's pricing to be out of line with supply and demand fundamentals, the larger the position he is willing to hold. While the rest of the market does not, at first, know the view of speculative traders, they can observe the speculators' positions in the market. When they see the speculators buy or sell, they may infer the speculators' view on fundamentals. For example, when other market participants see speculators buy, they are likely to infer that future physical prices will be higher and they will raise the futures price at which they are willing to trade. Conversely, when other market participants see speculators sell, they are likely to infer that future physical prices will be lower and will therefore lower the futures price at which they are willing to trade. In short, the impact of speculators on commodity futures prices is dependent upon how other market participants react to the information that the speculators are revealing.

It is important to note, however, that speculators can be wrong – either because the information they are using is misleading or incomplete. When this occurs, speculative positions can move prices away from future fundamentals. However, in the long-run, speculators who are wrong more often than they are right, are forced to exit the markets.

Simply by seeking to profit on the information they have gathered and assessed through their own research and analysis, speculators in aggregate reveal this view to the rest of the market. It is in this way speculators impact prices by bringing to the market views on forward supply and demand fundamentals that change the price at which the market is willing to trade. They are therefore an important part of the market's price discovery mechanism.

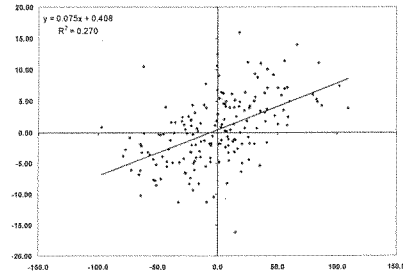
As such, we would expect prices to move with the positions of active view driven speculators, while being relatively unresponsive to the predictable passive positions of the index investors. This is what we observe in the market: increases in the size of speculative longs based on expectations of fundamentals are correlated with rising prices (see Exhibits 5-8). Changes in the positions of index investors are not.

The reason for this is straightforward. Index investments are made slowly and predictably, and contracts are exited well before settlement. Non-index investments, however, tend to be strongly correlated with underlying fundamentals and they tend to be



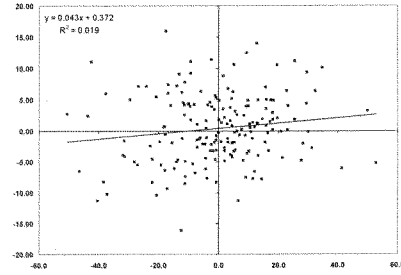
focused on price levels. Thus, their size is adjusted to passive index investments, offsetting the effects of those investments.

Exhibit 5: Wheat prices move with forward fundamental views of speculators... percentage (vertical axis), million bushels (horizontal axis)



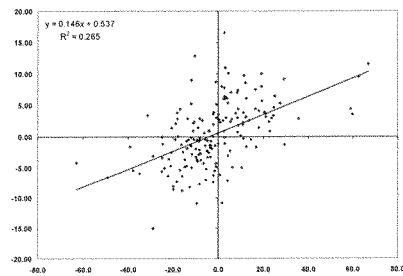
Source: CBOT, CFTC, and Goldman Sachs ECS Research.

Exhibit 6: ... but not with index investors percentage (vertical axis), million bushels (horizontal axis)



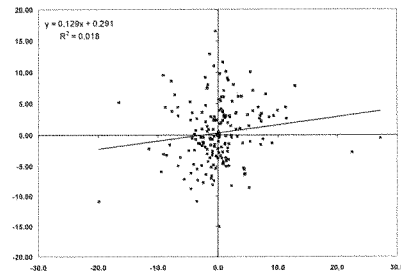
Source: CBOT, CFTC, and Goldman Sachs ECS Research.

Exhibit 7: Kansas Wheat prices move with forward fundamental views of speculators... percentage (vertical axis), million bushels (horizontal axis)



Source: CBOT, CFTC, and Goldman Sachs ECS Research.

Exhibit 8: ... but not with index investors percentage (vertical axis), million bushels (horizontal axis)



Source: CBOT, CFTC, and Goldman Sachs ECS Research.

- **Index investors do not appear to impact Wheat futures market price volatility**

As it relates to the Wheat market and its close cousins, economists can certainly debate whether a specific price is justified by fundamentals without ever coming to an agreed upon conclusion. Thus, when we look for price distortions, we do not seek to match our view of what prices should have been against actual prices. Instead, we look for combinations of futures contracts subject to similar economics, but differing capital flows or technical aspects, to see what factors actually drove specific contract behavior. In the

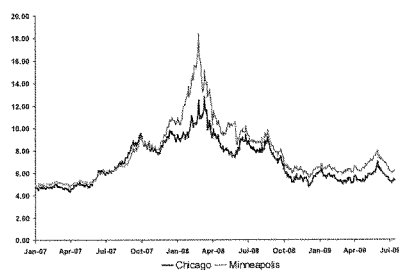
case of wheat, we would compare a wheat contract *with* index exposure against one with *little or no* index exposure. We would also look at non-wheat agricultural contracts. The obvious choice in this case would be to analyze the two largest grains not included in commodity indices, but with large global trading – namely, rice and oats.

To compare a wheat contract *not* included in an index versus one that *is* included in an index, we could look at Minneapolis wheat prices versus Chicago wheat prices, as Chicago wheat has far greater index investments. When we conduct such an examination, we see more instability in Minneapolis wheat prices, suggesting that if anything, index investing has helped to stabilize prices. See Exhibit 9. One caveat to note here is that Chicago wheat was included in many indices because it has more liquidity, and thus greater stability may simply reflect greater liquidity.

The comparison of wheat prices to rice and oat is particularly interesting, as rice is actually a larger commodity by global market size. What we see when we compare wheat to rice and oats is that increases in prices across these three commodities have been similar, but oat prices have declined by a greater amount. See Exhibit 10. While not definitive, this analysis strongly suggests that the mechanics and quantity of index investments did not drive the extreme price movement in the wheat market.

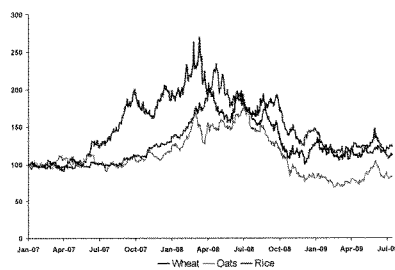
In the case of Chicago wheat contracts, we believe that changes to settlement procedures can substantially improve the impact of these contracts as they expire and shift from futures to cash. We also believe that attempts to restrict capital flows into these markets or limits on the ability of market-makers to provide the kind and amount of commodity exposure that investors demand will reduce market efficiency and increase costs for hedgers and investors seeking access to these markets.

Exhibit 9: Minneapolis wheat prices spike far higher than Chicago, despite little index investment...



Source: CME, MGEX and Goldman Sachs ECS Research.

Exhibit 10: ...Oats and Rice prices also increased sharply before declining

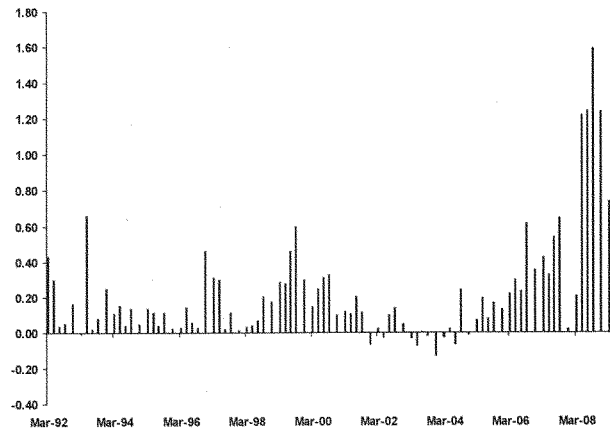


Source: CME and Goldman Sachs ECS Research.

#### **D. Wheat Market Cash and Futures Convergence Issue:**

We share the Subcommittee's concerns regarding the failure of Wheat futures prices to converge to wheat cash prices over the past several years (see Exhibit 11). It is, after all, the convergence of the futures price to the cash price of the physical commodity at the expiry of the futures contract that gives confidence in the link between the financial and the physical markets. However, while convergence gives confidence in the link, it is the delivery mechanism of the futures contract that ensures the link to the physical market.

Exhibit 11: Wheat futures contract prices have failed to converge to the price of wheat in the cash market at contract expiry  
\$/bu



Source: CME, USDA, and GS Global ECS Research.

In the textbook example of a commodity futures contract, the contract specifies delivery of a set physical amount of the commodity, on a specific date and at a specific location. Due to the delivery mechanism, as the futures contract expires it becomes equivalent to ownership of the set physical amount of the commodity at the specified delivery location. Consequently, if the futures price were higher than the cash price, it would offer a strong incentive to sell the futures contract, buy the physical commodity in the cash market and deliver it against the contract. In this way, one earns the spread between the futures and the cash price. We would expect this simple arbitrage to continue to be exploited until futures and cash prices converge.

In the case of the Wheat futures contract, however, the contract does not specify the delivery of a set physical amount of the commodity, but rather the delivery of a shipping certificate. This shipping certificate gives its owner the right to request and take delivery of a set physical amount of the commodity, but also gives the owner the right to defer taking delivery for an indefinite period of time, provided they pay a predetermined fixed daily premium.

The option to defer taking delivery of the physical wheat can make the shipping certificate more valuable than the value of the physical wheat alone. For example, suppose that a wheat consumer wants to take delivery of physical wheat one year from today. The wheat consumer could buy physical wheat today and pay to put it in storage for a year, say at a storage cost of 10 cts/bu per month. The wheat consumer could also take delivery of a shipping certificate from an expiring Wheat futures contract, and then defer taking delivery of physical wheat for one year, paying the predetermined premium of say 4.5 cts/bu per month. In this simple example, the wheat consumer would save 5.5 cts/bu each month by using the shipping certificate rather than storing the physical wheat. The wheat consumer would be willing to pay 66 cts/bu more for the futures contract at expiry – in order to secure the shipping certificate – than they would be willing to pay for cash wheat. Further, it must be kept in mind that the shipping certificate allows delivery to be

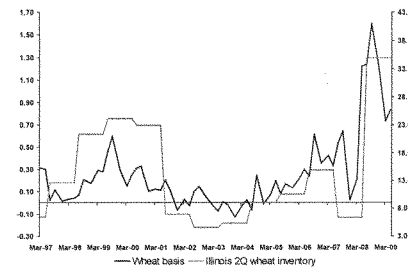
delayed indefinitely, and in periods when storage is full, one would expect market prices for storage to rise, both of which increase the value of the shipping certificate even further relative to the physical wheat.

In short, we would explain the failure of Wheat futures prices to converge to wheat prices in the cash markets at expiry as follows:

1. The Wheat futures contract converges in price to the price of the shipping certificate that is delivered against it at contract expiry.
2. Because the shipping certificate embeds the option (which has value) to defer delivery for a preset cost, in effect it can allow its owner to obtain storage at below market rates, particularly when inventory capacity is tight and storage costs are high.
3. Under market conditions in which spare storage inventory capacity is low and storage costs are high, or in which cash market prices are volatile, this embedded storage option makes the shipping certificate much more valuable than the physical wheat it represents.
4. The basis between Wheat futures and cash wheat prices at expiry equals the value of the option embedded in the shipping certificate.

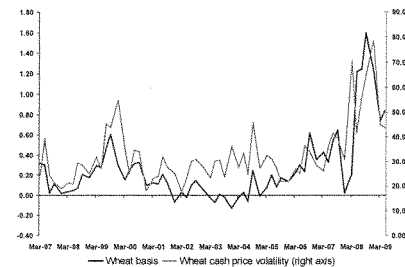
Under the reasoning laid out above, we would expect to see the wheat basis widen in periods of high inventories and high cash market volatility. This is exactly what we have observed in the wheat market (see Exhibits 12 and 13).

Exhibit 12: Wheat basis widens when Illinois wheat stocks reach high levels...  
\$/bu (left axis), mn bu (right axis)



Source: CME, USDA, and GS Global ECS Research.

Exhibit 13: ... Wheat basis widens when the volatility of wheat cash prices increase  
\$/bu (left axis), % per annum (right axis)

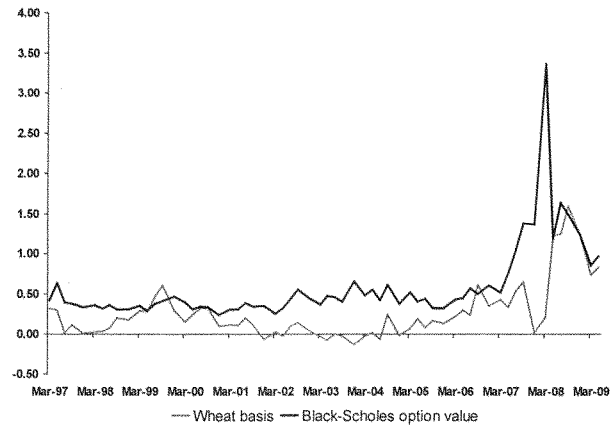


Source: CME, USDA, and GS Global ECS Research.

Another way of seeing this same point is to use the underlying volatility in the cash wheat market to value an option on physical wheat using the Black-Scholes model. As Exhibit 14 illustrates, periods of high cash wheat price volatility create a higher value for the option on physical wheat. While the complexity of the option embedded in the Wheat futures contract delivery mechanism precludes as simple exposition of its value here. The point remains that higher cash market price

volatility will increase the value of the option, and it will raise the value of the shipping certificate relative to the price of cash wheat.

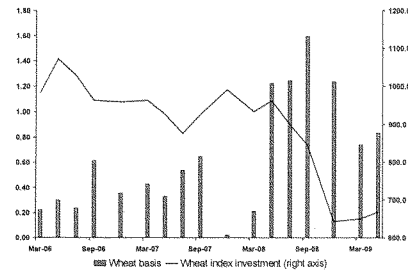
Exhibit 14: The value of an option on physical wheat, like the one embedded in the shipping certificate, rises with the level of volatility in cash market wheat prices \$/bu



Source: CME, USDA, and GS Global ECS Research.

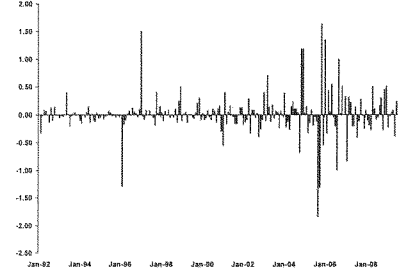
Conversely, we observe little correlation between the amount of index investment in the Wheat futures market and the basis (see Exhibit 15). This supports the idea that any index investment would be highly unlikely to interfere with price convergence at delivery, as the indices have rolled out of the futures contract long before it expires. Furthermore, if index investment was causing problems in the Wheat market, we would expect to see problems in other commodity markets in which index investors participate - but we do not. Interestingly, in the NYMEX natural gas market, which requires physical delivery, price convergence has not been a problem (see Exhibit 16).

Exhibit 15: Index investment in wheat declined over the period in which basis widened...  
\$/bu (left axis), million bushels (right axis)



Source: CME, USDA, and GS Global ECS Research.

Exhibit 16: ... The NYMEX natural gas market specifies physical delivery, and achieves price convergence  
\$/mmBtu



Source: CME, USDA, and GS Global ECS Research.

This reasoning is also consistent with the motives of the physical market participants. The farmer who has hedged his wheat production only to witness the futures price above cash at expiry would prefer to deliver his wheat in fulfillment of the futures contract, receiving the higher futures price rather than the lower cash price. However, this farmer cannot do this unless he is certified by the exchange to issue shipping certificates. Consequently, he is forced to buy back his futures position at the higher price and sell his wheat at the lower cash price. He could potentially sell his wheat to an elevator or shipper that is authorized to issue shipping receipts, but they will not want to put the wheat in their elevator at a low predetermined premium in situations where there storage capacity is limited. That is, the elevators and shippers do not want to give away these costly options on their limited storage capacity for free.

This reasoning also suggests that the remedy for the convergence failures in the Wheat market would be to reduce the value of the storage options embedded in the shipping certificate. In the extreme, this could be done by requiring the holders of the shipping certificate to take physical delivery within a specified time frame. This would force the price convergence, much like in the NYMEX natural gas market. However, many of the changes proposed and being implemented by the CME also reduce the value of the storage option embedded in the shipping certificates. These include:

- Adding three new delivery territories: 1) train loading facilities in a 12-county area of Northwest Ohio, 2) barge loading facilities on the Ohio River from Cincinnati to the Mississippi River, and 3) barge loading facilities on the Mississippi River from below St. Louis to Memphis.
- Introducing seasonal storage charges to the contract. These premium charges are increases during the period from July through November to 8 cents per bushel per month. During the remainder of the crop year, from December through June, premium charges remain at the current level of 5 cents per bushel per month.
- Reducing the vomitoxin level for par delivery from 3 cents per million (ppm) to 2 ppm. Wheat containing 3 ppm vomitoxin will continue to be deliverable at a 12 cent per bushel discount and wheat containing 4ppm vomitoxin will continue to be deliverable at a 24 cent per bushel discount.

### E. Potential Consequences of Proposed Regulations:

We agree with the Subcommittee in regard to many of the problems that stem from the failure of the wheat contract to achieve price convergence at expiry. However, because we disagree with the Subcommittee's assessment that the failure to achieve price convergence is due to the presence of index investors, we believe the Subcommittee's recommendations to limit the involvement of index investors as a class of participants will do little to solve the underlying problem, and will likely have a number of unintended consequences on the functioning of the wheat market.

First, to the extent that restrictions on the ability of swaps dealers to hedge their risk on the U.S. exchanges limits the ability of index investors to allocate capital to the US commodity futures markets, the large number of index investors that are based outside of the U.S. will likely allocate capital to non-U.S. commodity futures exchanges. As detailed in Exhibit 17 there are many commodity futures contracts traded on European and Japanese exchanges that could become substitutes for U.S. commodity futures contracts. If capital and liquidity flowed off U.S. exchanges, the geographic center of price discovery in the global commodity markets would likely move outside the U.S., making hedging more expensive for U.S. commodity producers and price discovery more challenging for U.S. commodity consumers.

Exhibit 17: U.S. and non-U.S. exchanges  
\$/bu

Commodity	US Exchange	Non-US Exchange
Crude oil	NYMEX	ICE* TOCOM
Heating oil	NYMEX	ICE*
Gasoline	NYMEX	TOCOM
Natural gas	NYMEX	ICE*
Gold	NYMEX	TOCOM
Platinum	NYMEX	TOCOM
Wheat	CME	MATIF
Soybeans	CME	TGE
Corn	CME	TGE

\* Although the ICE is not a non-US Exchange, the contracts that formerly traded on the IFE before its acquisition by ICE could be reconstituted

Source: Goldman Sachs Research.

Second, because restrictions on swap dealers, or other financial intermediaries such as ETFs and mutual funds, do not limit directly limit the positions of the individual investor, they would likely simply lead to an expansion of the number of swaps dealers, ETFs and mutual funds, as individuals allocate their positions among a greater number of financial intermediaries. Further, these new financial firms would not be entering on the basis of knowledge or experience in managing commodity price risk, but simply on the basis of having room under the regulatory position limit, and likely would be undercapitalized and without sufficient infrastructure to manage risk well. The net result would likely be a similar aggregate number of positions, but splintered

among many smaller broker dealers, ETFs and mutual funds, with individual investors simply allotting their unrestricted position among a greater number of intermediaries.

Under the kind of stressful market conditions that most concern this Subcommittee, such a splintering would likely lead to even greater market volatility. The sale of large positions in periods of market stress is among the most significant destabilizing market actions. When these positions are in the hands of a single party or a small numbers of parties, their orderly sale is possible. When these same positions are in the hands of multiple dealers, the rush to sell becomes much stronger, as each dealer or fund manager is incentivized to sell before another. This is especially true for dealers running smaller trading books or for mutual funds and ETFs who compete for the best relative performance statistics. For these participants, a faster sale is best. This can lead to very disorderly markets and extreme volatility in times of stress. Thus, it is our view that splintering existing positions could lead to greater price volatility, and the likelihood that prices overshoot underlying fundamentals.

#### **F. Conclusions:**

In conclusion, we believe that index investors play an important role in commodity markets by providing needed liquidity that helps to fill the gap between the large number of commodity producers who wish to hedge their risk, and the more limited number of consumers who are willing to provide those hedges. They tend to be long-term investors who require real economic incentives for their investments. Thus, their interests are aligned with those of the market and the Subcommittee.

While we find the Subcommittee report to be detailed and focused on important issues, we disagree with some of its key conclusions. First, we do not think that passive index investors have been responsible for excessive price volatility in the Wheat market. We base this conclusion on analysis of other commodities markets without passive investments, or of with similar economic exposures. Restrictions on passive investments, in our view, would not likely have lessened price volatility in the recent past.

Second, we believe that the failure of Wheat futures contracts to converge with the cash market is driven by the design of the delivery mechanism of the futures contracts, and not by passive investments. This is an important issue that can and should be addressed. We suggest implementing similar changes to contracts as those recommended by the Subcommittee for the crude oil market – namely, expanding the number of delivery sites and generally easing the terms for delivery.

Finally, we think that implementing position limits, ceasing to allow position limit exemptions or eliminating index investing altogether will not reduce the volatility of prices in the Wheat market, but may have unintended consequences. For example, index investors based outside of the U.S. may move their activity offshore. Or the proposals that are currently being debated may simply splinter the positions held by index investors, in the process potentially increasing market volatility.

Attempts to regulate volatility have rarely – if ever – succeeded. Yet they often have unintended and significant consequences. Therefore, as we look ahead, we think the question we should focus on is “which types of market rules and oversights allow participants to best manage their risk at a reasonable cost?”



Written Testimony of  
Charles P. Carey  
Vice Chairman  
CME Group Inc.  
Before the  
Senate  
Permanent Subcommittee on Investigations  
July 21, 2009

I am Charles P. Carey, vice-chairman of CME Group Inc. Thank you Chairman Levin and Ranking Member Coburn for inviting us to testify today respecting the June 24, 2009, staff report titled, "Excessive Speculation in the Wheat Market." I was the chairman of the Chicago Board of Trade, the home of the soft red winter wheat market, prior to the merger that created CME Group. I trade wheat, corn and other agricultural products and I am the point person on the Board of Directors for dealing with grain markets. I deal with the concerns respecting the impact of index traders on our markets expressed by our members and the agriculture industry and have been directly involved in CBOT's ongoing efforts to modify the wheat contract to assure better convergence.

Initially, I was inclined to give credit to the views of many of our commercial customers that index trading may have been having unwarranted impacts on our wheat market. We responded to these concerns by arranging for an independent analysis of this thesis across grain markets, we also cooperated with others conducting such studies and we analyzed all of the studies of this subject that preceded the report prepared by this Subcommittee.

None of the relevant studies supported the conclusion that index traders or swap dealer participation in our markets was a cause of volatility, high commodity prices or lack of convergence. Indeed, in our corn and soybean markets, there have been no significant convergence issues even though there is substantial participation in those markets by index traders and swap dealers. Despite the clear conclusions of these independent professional studies and our own experience in other grain markets, I remained concerned. I am not a professional statistician or economist and could not ignore the confluence of unexplained price behavior and the large share of open interest held by non-commercial participants. It is difficult to ignore that coincidence and many traders and some of our customers assumed that there was a strong chance that the two were connected.

The professional economists and statisticians explained to us that it was necessary to show causation not just coincidence and that I was committing a very common logical error by attributing cause based on correlation. I had hoped that this Subcommittee's study and report would add new evidence and clarify the relationship between index trading and the lack of convergence or any other unexplained price effect. We are absolutely committed to solving the convergence problem. We would have been pleased if the staff Report has provided a simple explanation and solution. Unfortunately, our economists and the informed critical response to the Report tell us that the Report fails to explain the lack of convergence, despite its assertions to the contrary, and that its proposed solutions are more likely to be harmful to the functioning of our markets than helpful.

You asked us to answer five questions and to discuss the committee's recent staff Report, "Excessive Speculation in the Wheat Market." We have tried to frankly and fully answer your questions, which we set out in full in italics and follow with our answer.

*(1) Please describe the recent pricing and convergence problems in the Chicago wheat market; the extent to which these problems have harmed market participants such as farmers, grain elevators, grain merchants, grain processors, and others; and whether these problems need to be addressed to protect the integrity of the CME wheat futures market.*

The Report calculates an average daily basis, using information from a wide variety of delivery points that is not derived from actual cash transactions in Chicago or at any other delivery point. According to those calculations the basis sharply diverged from historical levels and levels observed with respect to the Kansas City Wheat Contract, in the second quarter of 2008. We are also concerned that the basis appears to have moved out of line with historical precedents, but do not agree that the calculations included in the report are accurate. It is unclear that any participant in the market was actually harmed, although CBOT believes that its SRW Wheat futures contract cannot fully serve market participants unless divergence from historical basis levels are predictable and explicable on the basis of observable market events.

CBOT has been working to and continues to work to address the convergence issue, which we believe to be the result of divergence over time of commercial practices and contract specifications. Specifically, CBOT has implemented the following changes to the wheat contract: added delivery points, increased the storage fee seasonally and reduced the vomitoxin level (more detail provided in response to question 4. We believe it is important to allow these changes to take effect so that we may fairly assess their impact, and we continue to work with the industry and regulators on additional changes to the contract that might be employed to improve performance, including analysis of a variable

storage rate concept, cash settlement and new wheat products (world wheat index, U.S. milling wheat index, and others)

*(2) Please describe the nature and extent of commodity index trading in the CME wheat futures market over the past five years, including:*

*a. Whether CFTC data is accurate in showing that commodity index trading has increased dramatically in the CME wheat market over the past five years; commodity index traders typically purchased long wheat positions; and from 2006 to 2008, commodity index traders held 35% to 50% of the open long interest on the CME wheat futures exchange;*

While statistical information regarding index participation was not compiled prior to 2006, participation in CME Wheat measured in number of long futures contracts steadily decreased throughout 2008 and has only recently shown a modest increase. In March of 2008 commodity index trading long positions totaled 226,118 contracts. As of July 7, 2009 commodity index trading long positions totaled 182,479 contracts, a decline of 20%. Indeed, earlier in May of 2006 commodity index trading long positions totaled 222,593 – further demonstrating a relatively consistent level of participation for the last few years. During the period of 2006 to the Present, the percentage of long open interest held by commodity index traders fluctuated between 51.8%, reached on January 17, 2006 and 32% reached on October 24, 2006. The most recent data for July 7, 2009 indicates the percentage to be 46.4%.

*b. What types of companies compose the top ten CME wheat commodity index traders, measured by the number of CME wheat futures contracts held by such index traders from 2006 to 2008, including whether these index traders are affiliated with banks,*

*broker-dealers, hedge funds, or other types of market participant;  
and whether they are formed in the United States or in a non-U.S.  
jurisdiction;*

Currently, seven entities are swap dealers who are affiliated with banks; three of these banks are non-U.S. Two of the entities are affiliated with commercial firms and one entity is a registered CPO.

*c. How these top ten CME wheat commodity index traders compare to the top ten commercial wheat traders, measured by the number of CME wheat futures contracts held by such commercial traders versus the index traders and the extent to which they hold spot month or longer-term wheat contracts; and*

Based on information from the CFTC's COT report, during the period from January 2006 to the present, all commercials held an average of 257,214 future equivalent contracts in wheat. During this same period, commodity index traders held an average of 209,475 future equivalent contracts in wheat.

Looking at data as of July 7, 2009 the top 10 commercials held 75,584 futures contracts and the top 10 commodity index trader's held 162,932 future contracts. Commodity index trader's positions were held outside of the spot month. It is important to note that entities with swap exemptions and index exemptions are not allowed to carry positions in excess of speculative limits into the spot month. Commercial traders did carry positions into the spot month but the vast majority of their positions were held in months other than the spot

*d. If any of the top ten commodity index traders are allowed to exceed the CFTC standard 6,500 position limit for wheat contracts , whether they were granted a hedge exemption or waiver by the CFTC to do so, what all-months-combined position limit currently*

*applies to each such trader, and whether CME is charged with enforcing compliance with these higher position limits.*

Prior to being approved by the CME, all index traders were required to receive prior CFTC approval. The CME did not grant any exemptions to index traders that the CFTC had not already granted. The CME approved the exemptions for the identical quantity that the CFTC had approved. The total exemption quantity approved for index/swap exemptions in wheat is 413,145 contracts of which 19% or 78,586 contracts is currently being utilized. The exemptions only apply to “bona-fide” hedge exposure realized on the respective swap dealer’s books or actual fund exposure in the case of the two index funds granted exemptions pursuant to a no-action; the exemptions do not permit speculative trading beyond the entity’s actual level of exposure. Seventeen such entities have received exemptions, nine of which are currently being utilized, and the average exemption size across the seventeen entities is 24,303 contracts.

*(3) Please provide your views on the report recently released by the Subcommittee entitled, “Excessive Speculation in the Wheat Market,” including its findings and recommendations. Please indicate whether commodity index traders, in the aggregate, can significantly affect the price of futures contracts and the performance of the futures market.*

The report’s findings are based on faulty economic analysis and a misunderstanding of basic market economics. We agree that any large order to buy or sell futures contracts is likely to have temporary market impact. That effect is well understood. We do not agree that the price impact caused by temporary order imbalances have a lasting effect on market price or spreads.

There is no limit to the supply of futures contracts and it has not been shown that there is any limit on the capacity of traders and market makers to absorb new

or unusual capital flows into the market. In our experience, if the underlying contract is well designed, the futures price will revert to the equilibrium dictated by informed traders relatively quickly after index traders or other uninformed traders establish their positions. Once the buying pressure is satisfied, there is nothing to continue to buoy the market. Experienced market makers who sell to the index buyers would be wiped out in short order if this dictum were not correct. It is relevant that index traders do not generally maintain constant upward pressure on the market. They establish their positions in a short time frame, hold those positions, and then sell prior to the delivery period and buy in a subsequent contract month. In sum, the conclusions of the Report are contrary to numerous independent studies, which found there was no causal relationship between index funds' participation and price levels or volatility, and are inconsistent with the behavior of professional futures traders.

#### Comments on Findings and Analysis

- a. Index Traders Increased Futures Prices Relative to Cash Prices - the finding that index traders increased futures prices relative to cash prices is based on anecdotes not evidence. There is no statistical or economic analysis presented in the report to show causality between trading by index traders and weak basis. Instead, the report relies primarily on graphical presentation of two data series to draw a conclusion of causality: 1) the increasing share of long open interest held by index traders and 2) a trend of weakening basis (cash prices below futures). Several independent studies that employed standard statistical analysis techniques, including Granger Causality and Vector Autoregression, found that changes in positions of index traders did not cause changes in price levels (see *An Evaluation of the Influence of Large Reporting*

*Traders on Futures Market Performance; Informa Economics; February 24, 2009; at <http://www.informaecon.com/TraderStudy/TraderStudy.htm>.*

*Also see “Comments on Permanent Senate Subcommittee on Investigations Report “Excessive Speculation in the Wheat Market”; Scott Irwin, Darrel L. Good, Philip Garcia, and Eugene L. Kunda; Department of Agricultural and Consumer Economics, University of Illinois, July 6, 2009”.*

- b. Index Traders Impeded Price Convergence – This statement is made throughout the study and is based on the theory that index traders have created an excess demand for long futures positions which has caused futures prices to move higher in order to attract additional sellers into the market. The fact that the long futures positions of index traders must be offset (sold) prior to the delivery month resulting in futures prices moving lower is never mentioned. While the study notes that index traders roll their positions forward based on the formula stated in the index fund prospectus, it fails to mention that the hedge exemptions and no-action letters granted to index traders specify that positions cannot be carried into the spot (delivery) month, when convergence is expected to take place. Also, in many of the graphical presentations of basis used in the study, the authors chose to use the national average cash price, as represented by the MGEX/DTN Soft Red Winter Wheat Index, as the cash price. Basis is then calculated as the futures price minus the MGEX SRW cash index price. This also demonstrates a gross misunderstanding of delivery market economics where futures price the cheapest to deliver location/grade and not multiple locations throughout the entire U.S.



- c. Excessive Speculation led to Unwarranted Price Changes – this statement is also used throughout the study, however, the only evidence given is that soft red winter wheat cash prices were lower than SRW futures prices. Surprisingly, the authors did not interview regulatory staff from any of the exchanges or from CFTC in reaching this conclusion. Also, this finding is inconsistent with data showing that the long term relationship between Chicago and Kansas City wheat futures prices has remained stable. If index trading in the CBOT futures contract had caused unwarranted price changes, you would expect the relationship with KC wheat where there is relatively little index trading to also change.
- d. CFTC Waivers Facilitated Excessive Speculation – The report often mentions that CFTC waivers from speculative position limits led to excessive speculation, suggesting that CFTC and the Exchanges simply waived position limits for index traders. This is incorrect as individual index traders were given specific levels of exemptions based on data they provided to exchange and CFTC regulatory staff (the actual level of the exemptions is mentioned once in the report, however, the word “waiver” is used throughout and gives the impression that these firms could establish unlimited positions in the wheat market.) It is also worth noting again that the exemptions permit the index traders to establish positions beyond speculative limits only up to their level of actual exposure, and do not provide for speculative trading beyond the speculative limits.
- e. CME Group Wheat Contract Changes – there is only a very brief mention of CME Group contract changes that are designed to address the

convergence issue. In addition, the report states that most of traders and analysts interviewed were skeptical that the contract changes would be sufficient to address the convergence issue. The changes in the wheat contract's delivery specifications are major changes, and they have to be given time to work their way through the market to see if they will achieve the results that we expect them to. With the new delivery locations effective on July 1, seasonal storage rates on July 18 and lower vomitoxin standards on September 1, we anticipate a significant improvement in convergence as early as mid-September and certainly by the end of the year. We also fully expect these changes in contract specifications to continue to provide strong convergence in the future, however, we are ready to implement additional contract changes if necessary.

- f. Other Studies – None of the other recent studies that have been conducted on this issue by CFTC, GAO, or Informa were referenced in the PSI study. Instead, the authors included selected comment letters and statements from CFTC's Ag Forum that supported their conclusion that index traders were the major cause of convergence problems in the CBOT Wheat contract. This is another example of the use of unsupported opinion to reach a conclusion instead of empirical economic analysis or statistical analysis based on comprehensive survey data.

Overall, the Committee's recommendations to phase out existing exemptions and possibly lower existing speculative position limits would reduce liquidity in the wheat futures contract which would lead to increased hedging costs and an overall reduction in market efficiency. CME Group does not believe, and has not found evidence to convince otherwise, that index traders, in the aggregate, affect

price or market performance. Indeed, a number of studies have revealed the same conclusion (CFTC, Informa, University of Illinois, GAO) – none of which are referenced in the Subcommittee’s report. In addition to not contemplating the statistical evidence found in these reports, the Subcommittee only briefly mentions other fundamentals that could be affecting convergence and poor performance of the wheat contract – many cited by these others.

In particular, the Subcommittee does not address the basic nature of the contract itself. The CBOT wheat contract is in many respects a world contract in that it is used to trade wheat generically; however, as the fundamentals affecting world wheat and soft red winter wheat can differ, there is a potential for poor basis performance. The changes employed by CME Group to the contract attempt to address these contract imperfections, however, it must be recognized that users of the contract have expressed very different opinions about how to address this issue. Also, the Commodity Exchange Act dictates that material changes in contract specifications for enumerated commodities can only be implemented for months without open interest, which can inject a significant lead time into the implementation schedule for material changes since open interest in the wheat contract is present through July 2011.

*(4) Please describe the actions recently taken by CME Group to modify its wheat futures contract, what steps CME will take to determine whether these modification are curing the pricing and convergence problems in the Chicago wheat market, and how long CME anticipates it will take to complete this evaluation.*

On December 4, 2008 the CFTC approved amendments to the CBOT’s wheat futures contract submitted to the Commission by CME Group on September

4, 2008. The amendments, which added three new delivery locations, increased the storage rate fee, and reduced the vomitoxin level, are the most significant changes ever made to the contract. Specifically, the changes do the following:

- Add three new delivery locations, including a 12-county area in northwest Ohio at a discount of 20 cents per bushel; a territory along the Ohio River from Cincinnati to Mississippi River at par; and another along the Mississippi River from St. Louis to Memphis at a 20 cents per bushel premium.
- Increase the storage fee to eight cents per bushel from five cents for the period from July 18 through December 17.
- Reduce the vomitoxin level for par delivery to three parts per million on September 1, 2009 and to two parts per million on September 1, 2011. In addition, a discount schedule for wheat with three and four parts per million at rates of 12 and 24 cents per bushel, respectively will be implemented.

The first two of these changes – additional delivery points and higher storage fees – were implemented on July 1 and July 18, respectively, and the vomitoxin changes will be implemented gradually over the next two years due to the material impact they will have on contract pricing. It is possible that we will see some significant improvement in contract performance by mid-September and certainly by the end of the year (basis has already strengthened from nearly \$2 under futures one year ago to approximately \$0.60 under futures at the new delivery locations on the Ohio River).

CME Group believes these changes will have a significant impact on the performance of the wheat contract. That said, we continue to maintain a dialogue and consult with the CFTC and market users to weigh other possible changes to the

contract to better its performance. Additionally, we are participants in the CFTC's convergence subcommittee – a subset of Commissioner Dunn's Agriculture Advisory Committee – that was established after approval of the amendments to the CBOT wheat contract and is tasked with examining the convergence issue and future performance of the contract, and making recommendations for any additional changes.

*(5) If the CFTC were to phase out existing hedge exemptions and waivers for commodity index traders and require them to comply with the standard 6,500 position limit for wheat contracts, please describe how you believe the CME and CME wheat futures market would be affected.*

As previously noted, in general, a change to the exemption process/allowance would impact market liquidity and therefore increase hedging costs in general. It is worth noting again that the exemptions from the limits does not apply to the spot month. Finally, removing these exemptions implies that the use of commodity futures by investors for financial hedging, portfolio diversification and as an inflation hedge is not a legitimate/bona fide hedge. Such a policy is bad for investors, bad for the economy and contrary to Congressional efforts to control systemic risk through intelligent regulatory reform.

We absolutely agree with the Subcommittee's concern that the lack of convergence impairs the value of our market and needs to be corrected. We share the concern of knowledgeable economists who have examined this market and who have carefully reviewed the Subcommittee's report that the evidence adduced in support of the conclusion that index traders are the principle cause of the lack of convergence and persistent contango has not been validated by any of the statistical measures that are accepted by experts in the field. We are concerned that

the Report's focus of blame on index traders and speculators directs attention away from appropriate efforts to identify any structural problems with the contract specifications and impairs our ongoing efforts to cure the problem by fixing those terms.

We have implemented very significant changes to the delivery specifications of the SRW wheat contract. We have acted in accordance with our obligations under the CEA respecting the timing of changes to enumerated futures contracts with open interest and have attempted to take account of the suggestions of all segments of the industry to whom this contract is important. We have also attempted to implement the changes in an orderly fashion so that we will have time to judge their effectiveness and so that we do not overshoot the market and risk damaging the liquidity that users of this market depend on.

We have authorized a wide ranging addition of delivery points and facilities. We added 58 new locations for delivery and that will provide an additional 90 million bushels of capacity on the Ohio and Mississippi rivers and in a 12-county area of Northwest Ohio. We expect that this will relieve any congestion issues that prevented arbitrage from driving the convergence within historic ranges and better align our delivery locations with the primary flow of soft red winter wheat in the domestic cash market and to the New Orleans Gulf for export. Similar changes made to the corn and soybean contracts in 2000 greatly enhanced the performance of these contracts and we expect similar results from these changes in the wheat contract.

We have also implemented seasonal storage rate adjustments that are intended to incent shorts who own deliverable wheat or who can acquire deliverable wheat to make delivery when the basis moves to unjustifiable

differentials. The higher futures storage rate during the July-December period reflects higher seasonal storage rates in the cash market when wheat that has just been harvested competes with the upcoming corn and soybean harvests for storage space and will allow wider carrying charges if needed throughout the country elevator system and for producers with on-farm storage. The higher futures storage charges will also encourage buyers who stand for delivery and must pay the storage rate to the seller, to either load out or re-deliver the wheat, both of which will enhance convergence.

On September 1, the reduced level of allowable vomitoxin will be implemented, which will convert the contract from a feed grade wheat contract to a human consumption grade. We expect that this change will have a positive impact on convergence for the following reasons: (1) the estimated cash market discount for wheat with 4 parts per million of vomitoxin is 12 cents per bushel, and that differential will be applied to 4 ppm wheat delivered against futures contracts. Par delivery will require no more than 3 ppm of vomitoxin, which is expected to improve the cash/futures relationship by 12 cents per bushel; and (2) the industry standard for vomitoxin in the domestic milling and export markets is 2 ppm, and we will implement this level in delivery specifications for the futures contract in September 2011, with 3 ppm remaining deliverable at a 12 cent discount and 4 ppm at a 24 cent discount. This final change in the quality specifications for the wheat contract will align our par quality specifications with industry standards while providing the flexibility to deliver lower quality wheat at significant discounts when higher quality is not available.

We hope for a significant improvement in convergence as early as mid-September and, anticipate, with a higher degree of confidence, greater improvement by the end of the year. If the results fail to meet our expectations, we

have additional modifications at the ready and are prepared to continue to modify the contract or to introduce a new contract to provide a safe and effective environment to permit producers and users to hedge their needs and to provide effective price discovery to the remainder of the market.

We are committed to dealing effectively with the lack of convergence by attacking the structural problems regarding specifications and delivery. In this regard we are aligned with the staff's recommendations. We do not, however, believe that restrictions on index traders, beyond those that we already impose, are anything but a distraction from our efforts.



*United States Senate*

**PERMANENT SUBCOMMITTEE ON INVESTIGATIONS**

***Committee on Homeland Security and Governmental Affairs***

*Carl Levin, Chairman*

*Tom Coburn, Acting Ranking Minority Member*

# **EXCESSIVE SPECULATION IN THE WHEAT MARKET**

**MAJORITY AND MINORITY  
STAFF REPORT**

**PERMANENT SUBCOMMITTEE  
ON INVESTIGATIONS  
UNITED STATES SENATE**



**JUNE 24, 2009**

**SENATOR CARL LEVIN**  
**Chairman**

**SENATOR TOM COBURN, M.D.**  
**Acting Ranking Minority Member**

**PERMANENT SUBCOMMITTEE ON INVESTIGATIONS**

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9/22/09

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## **EXCESSIVE SPECULATION IN THE WHEAT MARKET**

### **TABLE OF CONTENTS**

<b>I. EXECUTIVE SUMMARY</b>	1
A. Subcommittee Investigation	4
B. The Cash and Futures Markets for Wheat	5
C. Increasing Commodity Index Speculation	5
D. Impact of Index Instruments on the Wheat Futures Market	7
E. Undue Burden on Interstate Commerce	10
F. Trading Limits on Index Traders	14
G. Other Commodities	16
H. Findings and Recommendations	17
Findings of Fact	17
1. Excessive Speculation in Wheat	17
a. Index Traders Increased Futures Prices Relative to Cash Prices	17
b. Index Traders Impeded Price Convergence	17
c. Unwarranted Price Changes	17
d. Undue Burden on Commerce	18
2. CFTC Waivers Facilitated Excessive Speculation	18
3. Inflated Futures Prices Affect Crop Insurance	18
4. Poor Data Impedes Analysis	18
Recommendations	18
1. Phase Out Existing Wheat Waivers for Index Traders	18
2. Take Further Action If Necessary	19
3. Analyze Other Agricultural Commodities	19
4. Strengthen Data Collection for Non-Agricultural Commodities	19
<b>II. THE U.S. WHEAT MARKET</b>	20
A. U.S. Wheat Production	20
B. Types of Wheat	24
C. U.S. Wheat Supplies	27
D. The Cash and Futures Markets for Wheat	29
1. Cash Markets for Wheat	30
2. Futures Markets for Wheat	32
E. Recent Trends in U.S. Wheat Prices	40
1. Recent Price Increases and Volatility	40
2. Effects of Commodity Price Spikes on Farmers and Grain Elevators	47

**III. HEDGING AND SPECULATION IN THE FUTURES**

<b>MARKETS</b>	54
A. Purposes of the Futures Market	54
B. Use of Hedging to Manage Risks	58
1. Hedging versus Speculation	58
2. Example of Hedging: The Grain Elevator	60
3. Importance of Convergence for Hedging	64
C. Key Market Terms	67
1. Basis	67
2. Price Spreads and “Carry”	71
3. Pricing Trends in Carry and Inversion Markets	73
D. Position Limits and Hedge Exemptions	75
1. Position Limits	76
2. Hedge Exemptions	78
<b>IV. COMMODITY INDEXES</b>	82
A. Commodity Index Trading in Agricultural Markets	83
B. Components of a Commodity Index	86
C. Three Types of Commodity Index Instruments	90
D. Types of Commodity Index Returns	96
E. Commodity Index Rationale and Marketing	98
1. The Marketing of Commodity Index Instruments	98
2. Critical Analyses of Index Instruments	102
F. Exemptions from Speculative Position Limits for Commodity Index Trading	112
<b>V. IMPACT OF INDEX TRADING ON THE WHEAT MARKET</b>	
<b>MARKET</b>	122
A. Pricing Breakdown in the Wheat Futures Market	123
B. The Role of Index Trading in Wheat Pricing Problems	129
1. Index Trading and Pricing Trends in the Wheat Market	129
a. Volume of Index Trading in the Wheat Market	129
b. Impact of Index Trading on Short-Term Futures Price Spreads	135
c. Impact of Index Trading on Longer-Term Price Spreads	140
2. Subcommittee Interviews with Market Participants	150
3. Testimony Presented to the CFTC	153
4. Recent Market Analyses	157
5. Basic Futures Market Theory: Impact of Speculation on Price	167
<b>VI. FUTURES PRICES AND CROP INSURANCE</b>	174
A. Background	174
1. Development of the Federal Crop Insurance Program	174
2. How the Program Works	176

3. Inadequate Program Oversight .....	178
B. Impact of Futures Prices on Crop Insurance .....	179
1. Increased Insurance Premiums .....	181
2. Inaccurate Insurance Payouts .....	184
3. Impact of Divergent Futures and Cash Prices .....	188
APPENDIX (Exhibits and Charts) .....	190

# # #

## EXCESSIVE SPECULATION IN THE WHEAT MARKET

### I. EXECUTIVE SUMMARY

For several years, the U.S. Senate Permanent Subcommittee on Investigations has been examining the role of speculation in the commodity markets and failures of the federal regulatory structure to prevent excessive speculation from causing unwarranted changes in commodity prices and an undue burden on interstate commerce.

In 2006, the Subcommittee released a report showing how the injection of billions of dollars from speculation into the commodity futures markets had contributed to rising energy prices.<sup>1</sup> In 2007, the Subcommittee released a report and held a hearing showing how excessive speculation by a single hedge fund named Amaranth had distorted natural gas prices and contributed to higher costs for natural gas consumers.<sup>2</sup> These and other reports offered a number of recommendations for legislative and regulatory actions to enable the Commodity Futures Trading Commission (CFTC) to fulfill its mission under the Commodity Exchange Act to prevent excessive speculation from “causing unreasonable or unwarranted fluctuations in the price of commodities in interstate commerce.”

<sup>1</sup>In its 2006 Report, “*The Role of Market Speculation in Rising Oil and Gas Prices: A Need to Put the Cop Back on the Beat*,” S. Prt. 109-65 (June 27, 2006), the Subcommittee investigation found that influx of billions of dollars into the U.S. energy markets through commodity index funds had contributed to the rise in energy prices, and that the large influx of speculative investments in these markets had altered the traditional relationships between futures prices and supplies of energy commodities, particularly crude oil. The Report recommended that Congress enact legislation to “close the Enron loophole,” the provision in the Commodity Futures Modernization Act of 2000 (CFMA), which exempted from regulation the trading of futures contracts and swaps for energy and metals commodities on electronic exchanges. It also recommended legislation to ensure the CFTC had sufficient authority to monitor U.S. traders trading in U.S. commodities on foreign exchanges. See the 2006 Subcommittee Report at <http://hsgac.senate.gov/public/ files/SenatePrint10965MarketSpecReportFINAL.pdf>.

<sup>2</sup>In its 2007 Report, “*Excessive Speculation in the Natural Gas Market*,” reprinted in S. Hrg. 110-235 (June 25 and July 9, 2007), at pp. 196-710, the Subcommittee investigation found that Amaranth had distorted the price of natural gas futures contracts as a result of its large purchases of contracts on the regulated New York Mercantile Exchange (NYMEX) and “look-alike” swap contracts on the then-unregulated Intercontinental Exchange (ICE). As a result of several provisions in the CFMA, the CFTC did not have authority to limit the positions of traders using ICE rather than NYMEX. Based on this finding, the Report recommended that Congress enact legislation to close the Enron loophole in order to fully regulate electronic exchanges, like ICE, that are the functional equivalent of futures markets. In the 2008 Farm Bill, Congress enacted legislation to close the Enron loophole by providing that commodity contracts traded on over-the-counter electronic exchanges that perform a significant price discovery function be regulated in the same manner as futures contracts. As a result of this legislation, the CFTC now has the authority – and responsibility – to regulate and monitor these electronic markets to prevent excessive speculation. See the 2007 Subcommittee Report at <http://hsgac.senate.gov/public/ files/REPORTExcessiveSpeculationintheNaturalGasMarket.pdf>.

In the Amaranth investigation, the Subcommittee examined how the activities of a single trader making large trades on both a regulated futures exchange and an unregulated electronic energy exchange constituted excessive speculation in the natural gas market. To prevent this type of excessive speculation, the Subcommittee Report recommended that limits on the number of contracts that a trader can hold at one time, known as position limits, be applied consistently to both markets in which the same type of natural gas contracts are traded.

In the current investigation, the Subcommittee has examined how the activities of many traders, in the aggregate, have constituted excessive speculation in the wheat market. To prevent this type of excessive speculation, this Report recommends that the CFTC phase out waivers and exemptions from position limits that were granted to commodity index traders purchasing wheat contracts to help offset their sales of speculative financial instruments tied to commodity indexes.

A commodity index, like an index for the stock market, such as the Dow Jones Industrial Average or the S&P 500, is calculated according to the prices of selected commodity futures contracts which make up the index. Commodity index traders sell financial instruments whose values rise and fall in tune with the value of the commodity index upon which they are based. Index traders sell these index instruments to hedge funds, pension funds, other large institutions, and wealthy individuals who want to invest or speculate in the commodity market without actually buying any commodities. To offset their financial exposure to changes in commodity prices that make up the index and the value of the index-related instruments they sell, index traders typically buy the futures contracts on which the index-related instruments are based. It is through the purchase of these futures contracts that commodity index traders directly affect the futures markets.

The Subcommittee investigation examined in detail how commodity index traders affected the price of wheat contracts traded on the Chicago Mercantile Exchange. CFTC data shows that, over the past three years, between one-third and one-half of all of the outstanding wheat futures contracts purchased (“long open interest”) on the Chicago exchange are the result of purchases by index traders offsetting part of their exposure to commodity index instruments sold to third parties. The Subcommittee investigation evaluated the impact that the many purchases made by index traders had on prices in the Chicago wheat futures market. This Report finds that there is significant and persuasive evidence to conclude that these commodity index traders, in the aggregate, were one of the major causes of “unwarranted changes” – here, increases – in the price of wheat futures contracts relative to the price of wheat in the cash market. The resulting unusual, persistent, and large disparities between wheat futures and cash prices impaired the ability of participants in the grain market to use the futures market to

price their crops and hedge their price risks over time, and therefore constituted an undue burden on interstate commerce. Accordingly, the Report finds that the activities of commodity index traders, in the aggregate, constituted “excessive speculation” in the wheat market under the Commodity Exchange Act.

The futures market for a commodity provides potential buyers and sellers of the commodity with prices for the delivery of that commodity at specified times in the future. In contrast, the cash market provides potential buyers and sellers with the price for that commodity if it is delivered immediately. Normally, the prices in the futures market follow a predictable pattern with respect to the cash price for a commodity. Typically, as a contract for future delivery of a commodity gets closer to the time when the commodity is to be delivered under the contract (the expiration of the contract), the price of the futures contract gets closer to the price of the commodity in the cash market. The prices are said to “converge.” In recent years in the wheat market, however, the futures prices for wheat have remained abnormally high compared to the cash prices for wheat, and the relationship between the futures and cash prices for wheat has become unpredictable. Oftentimes the price of wheat in the Chicago futures market has failed to converge with the cash price as the futures contracts have neared expiration.

The result has been turmoil in the wheat markets. At a time when wheat farmers were already being hit by soaring energy and fertilizer costs, the relatively high price of wheat futures contracts compared to the cash price, together with the breakdown in the relationship between the two prices and their failure to converge at contract expiration, have severely impaired the ability of farmers and others in the grain business to use the futures markets as a reliable guide to wheat prices and to manage price risks over time.

Participants in the grain industry have complained loudly about the soaring prices and breakdowns in the market. “Anyone who tells you they’ve seen something like this is a liar,” said an official of the Farmers Trading Company of South Dakota. An official at cereal-maker Kellogg observed, “The costs for commodities including grains and energy used to manufacture and distribute our products continues to increase dramatically.” “I can’t honestly sit here and tell who is determining the price of grain,” said one Illinois farmer, “I’ve lost confidence in the Chicago Board of Trade.” “I don’t know how anyone goes about hedging in markets as volatile as this,” said the president of MGP Ingredients which provides flour, wheat protein, and other grain products to food producers. “These markets are behaving in ways we have never seen,” said a senior official from Sara Lee. A grain elevator manager warned, “Eventually, those costs are going to come out of the pockets of the American consumer.”



The inability of farmers, grain elevators, grain merchants, grain processors, grain consumers, and others to use the futures market as a reliable guide to wheat prices and to manage their price risks over time has significantly aggravated their economic difficulties and placed an undue burden on the grain industry as a whole.

This Report concludes there is significant and persuasive evidence that one of the major reasons for the recent market problems is the unusually high level of speculation in the Chicago wheat futures market due to purchases of futures contracts by index traders offsetting sales of commodity index instruments. To diminish and prevent this type of excessive speculation in the Chicago wheat futures market, the Report recommends that the CFTC phase out existing exemptions and waivers that allow some index traders to operate outside of the trading limits designed to prevent excessive speculation.

#### **A. Subcommittee Investigation**

To prepare this Report, the Subcommittee conducted a year-long, bipartisan investigation. As a first step, the Subcommittee obtained and analyzed price and trading data from a variety of agricultural futures and cash markets. The Subcommittee obtained, for example, daily and monthly wheat futures and cash price data from the CFTC, U.S. Department of Agriculture, Chicago Mercantile Exchange, Kansas City Board of Trade, and Minneapolis Grain Exchange. The Subcommittee also examined numerous historical materials on the operations and performance of the grain futures markets, and on the development and application of relevant statutes, regulations, and guidance. The CFTC provided extensive data on index trading, as well as information on the application of position limits and the granting of exemptions. The Subcommittee appreciates the cooperation and responsiveness of the exchanges and federal agencies.

To understand the issues, the Subcommittee interviewed numerous experts and persons familiar with the wheat markets, agricultural commodity markets as a whole, and commodity indexes. The interviews included persons familiar with grain trading and actual traders from a wide range of organizations in the grain industry: farm organizations, grain elevator operators, grain merchants, grain processors, food manufacturers, and agricultural trade groups. The Subcommittee also interviewed farmers, market analysts, agricultural economists, academic experts, financial institutions, and exchange officials. The Subcommittee also benefited from a number of meetings and presentations provided by the CFTC. The Subcommittee appreciates the cooperation and assistance of these individuals, organizations, and agencies.

### **B. The Cash and Futures Markets for Wheat**

Wheat crops change hands primarily through cash transactions. There is no centralized cash market for wheat or other grains; the cash market exists wherever a grain elevator, grain merchant, grain consumer, or other participant in the grain industry posts a price to purchase or sell grain. Cash transactions take place all over the country, at all times of the day, either with or without the use of standardized contracts. In a common transaction, a grain elevator purchases wheat from a farmer for cash and then stores the wheat for sales throughout the year to grain processors.

Wheat futures are sold on three regulated exchanges: the Chicago Mercantile Exchange (CME), the Kansas City Board of Trade (KCBOT), and the Minneapolis Grain Exchange (MGEX). Wheat traded on the Chicago exchange, known as “soft red winter” wheat, is used mainly for crackers, pie crusts, cakes, and biscuits. Wheat traded in Kansas City, known as “hard red winter” wheat, is primarily used to make flour for bread. The Minneapolis exchange trades “hard red spring” wheat, which also is used to make bread, biscuits, and rolls.

All three of these futures exchanges offer standardized contracts to buy or sell standard amounts and types of wheat for which the only negotiated variable is the price. In the vast majority of cases, traders of wheat futures contracts do not take physical delivery of the wheat being bought or sold on the futures market. Rather, the primary purpose of the futures market is to enable market participants to “discover” the price of wheat for delivery at specified times in the future, to purchase or sell such contracts for future delivery at such prices, and thereby to enable wheat market participants to protect their business activities against the risk of future price changes.

### **C. Increasing Commodity Index Speculation**

A commodity index is calculated using the prices of the futures contracts for the commodities that make up the index. Each commodity within a commodity index is assigned a “weight,” and the contribution of each commodity toward the value of the index is calculated by multiplying the current price of the specified futures contract for that commodity by the assigned weight. All of the major, broad-based commodity indexes include soft red winter wheat futures contracts traded on the Chicago exchange as one of their component commodities.

The purchase of a financial instrument whose value is linked to a commodity index offers the buyer the potential opportunity to profit from the price changes in futures contracts for a broad spectrum of commodities, without having to actually purchase the referenced commodities. Typically, hedge funds, pension funds, and other large

institutions purchase these financial instruments with the aim of diversifying their portfolios, obtaining some protection against inflation, and profiting when commodity prices are rising. Since they are not involved in selling or buying actual commodities, and do not use these instruments to hedge or offset price risks regarding the actual use of the underlying commodities, the purchasers of commodity index instruments are making a speculative investment.

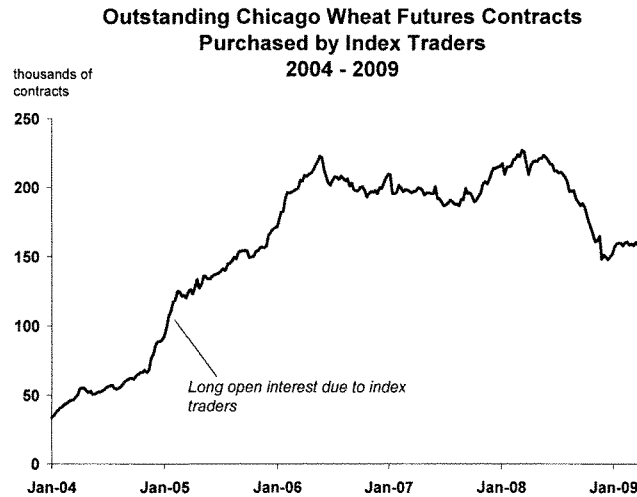
The large growth in commodity index speculation is a recent phenomenon. It is only over the past six years that financial institutions have heavily marketed commodity index instruments as a way to diversify portfolios and profit from rising commodity prices. The total value of the speculative investments in commodity indexes has increased an estimated tenfold in five years, from an estimated \$15 billion in 2003, to around \$200 billion by mid-2008.<sup>3</sup>

The amount of speculation in the wheat market due to sales of commodity index instruments has, correspondingly, grown significantly over the past five years. CFTC data indicates that purchases by index traders in the largest wheat futures market, the Chicago Mercantile Exchange, grew sevenfold from about 30,000 daily outstanding contracts in early 2004, to a peak of about 220,000 contracts in mid-2008, before dropping off at year's end to about 150,000 contracts. (Figure ES-1). The data shows that, during the period from 2006 through 2008, index traders held between 35 and 50% of the outstanding wheat contracts (open long interest) on the Chicago exchange and between 20 and 30% of the outstanding wheat contracts on the smaller Kansas City Board of Trade.

The presence of index traders is greatest on the Chicago exchange compared to the other two wheat exchanges, and is among the highest in all agriculture markets. In addition, neither of the other two wheat markets, nor any other grain market, has experienced the same degree of breakdown in the relationship between the futures and cash markets as has occurred in the Chicago wheat market. Accordingly, the Subcommittee focused its investigation on the role of index trading on the Chicago exchange and the breakdown in the relationship between Chicago wheat futures and cash prices.

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<sup>3</sup> This estimate reflects both the actual amounts invested in commodity index related instruments and the appreciation in value of those investments due to increasing commodity prices.



**Figure ES-1.** Growth in index fund purchases of Chicago wheat futures contracts. Chart prepared by Permanent Subcommittee on Investigations. Data source: CFTC.

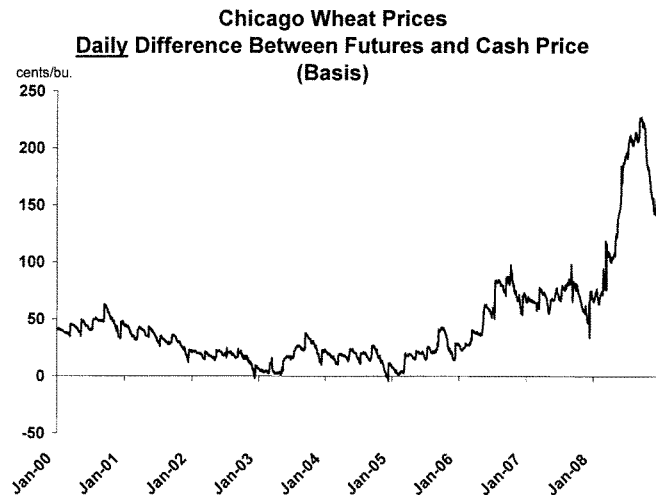
#### **D. Impact of Index Instruments on the Wheat Futures Market**

Commodity indexes have an indirect but significant impact on futures markets. A commodity index standing alone is a computational device unsupported by any actual assets such as futures or commodity holdings. Financial institutions that sell index investments, however, have created three basic types of financial instruments tied to commodity indexes: commodity index swaps, exchange traded funds (ETFs), and exchange traded notes (ETNs). Commodity index swaps are sold by swap dealers and are the most common index instrument; ETFs and ETNs offer index-related shares for sale on a stock exchange. The value of commodity index swaps, index-related ETFs, and index-related ETNs rises and falls with the value of the commodity index upon which each is based.

Speculators who buy index instruments do not themselves purchase futures contracts. But the financial institutions who sell them the index instruments typically do. In the case of commodity index swaps, for example, swap dealers typically purchase futures contracts for all commodities on which an index is based to offset their financial exposure from selling swaps linked to those futures contracts. CFTC data shows that, over the past five years, financial institutions selling commodity index instruments have together purchased billions of dollars worth of futures contracts on the Chicago Mercantile Exchange.

The Subcommittee investigation has found that the large number of wheat futures contracts purchased by swap dealers and other index traders is a prime reason for higher prices in the wheat futures market relative to the cash market. Commodity traders call the difference between the futures prices and the cash price “the basis.” Index traders typically do not operate in the cash market, since they have no interest in taking delivery or making use of a wheat crop. Instead, index traders operate in the futures markets, where they buy futures contracts to offset the index instruments they have sold. The additional demand for wheat futures resulting from these index traders is unrelated to the supply of and demand for wheat in the cash market.

In the Chicago wheat market, the result has been wheat futures prices that are increasingly disconnected from wheat cash prices. Data compiled by the Subcommittee shows that, since 2006, the daily gap between Chicago wheat futures prices and wheat cash prices (the basis) has been unusually large and persistent. Figure ES-2 presents this data for the last eight years.

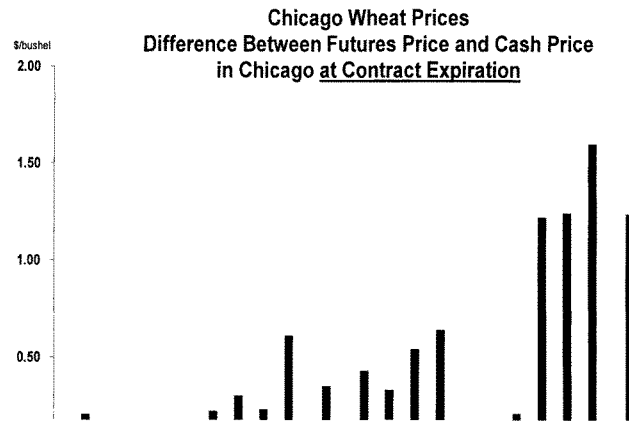


**Figure ES-2.** Increase in daily difference between futures and cash prices for Chicago wheat. Chart prepared by Permanent Subcommittee on Investigations. Data sources: CME (daily futures prices); MGEX (average daily cash prices).

From 2000 through 2005, the average daily difference between the average cash and the futures price for soft red winter wheat traded on the Chicago exchange was about 25 cents. During the second half of 2008, in contrast, the price of the nearest wheat futures contract on the Chicago exchange was between \$1.50 and \$2.00 per bushel higher than the

average cash price, an unprecedented price gap (basis).<sup>4</sup> During that period, the average cash price for soft red winter wheat ranged from \$3.12 to \$7.31 per bushel, while the futures price ranged from \$4.57 to \$9.24. The fundamentals of supply and demand in the cash market alone cannot explain this unprecedented disparity in pricing between the futures and cash markets for the same commodity at the same time.

In addition, increasingly, the wheat futures prices on the Chicago exchange have not converged with the cash prices at the expiration of the futures contracts. Figure ES-3 shows the extent of this price gap (basis).



**Figure ES-3.** Increase in difference between futures and cash prices for Chicago wheat at futures contract expiration. Chart prepared by Permanent Subcommittee on Investigations. Data sources: CME (daily futures prices) and USDA (cash prices at Chicago).

The data underlying this chart shows that the average difference between the cash and futures price at contract expiration at the delivery location in Chicago for the Chicago wheat futures contract rose from an average of about 13 cents per bushel in 2005 to 34 cents in 2006, to 60 cents in 2007, to \$1.53 in 2008, a tenfold increase in four years.

In the same period during which these pricing disparities occurred, CFTC data shows a very large presence of index traders in the Chicago wheat market. Since 2006, index traders have held between one-third and one-half of all of the outstanding purchased futures contracts (“long open interest”) for wheat on the Chicago exchange. For most of 2008, the demand for Chicago wheat futures contracts from these index

<sup>4</sup> Typically, traders define basis as the difference between the cash and futures price (basis = cash – futures). In this Report, the basis is defined as the difference between the futures and cash price (basis = futures – cash) in order to give a positive value to the basis when the futures price is higher than the cash price, as it typically is in the wheat market.

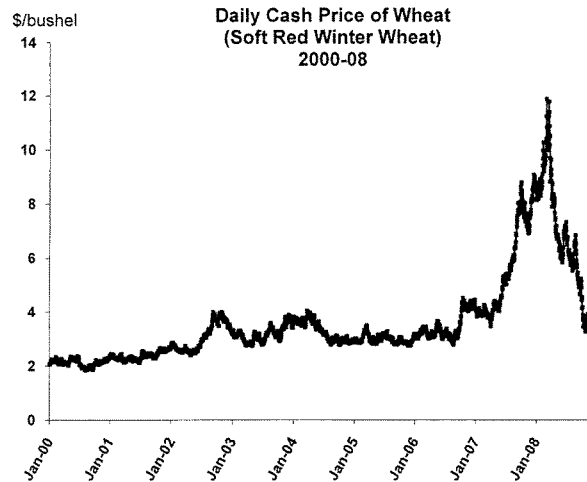
investors was greater than the supply of wheat futures contracts from commercial firms selling grain for future delivery. During July 2008, for instance, index traders buying wheat futures contracts held, in total, futures contracts calling for the delivery of over 1 billion bushels of wheat, while farmers, grain elevators, grain merchants, and other commercial sellers of wheat had outstanding futures contracts providing for the delivery of a total of only about 800 million bushels of wheat. Under these circumstances, the additional demand from index traders for contracts for future delivery of wheat bid up the futures prices until prices were high enough to attract additional speculators willing to sell the desired futures contracts at the higher prices.

The investigation found that, in 2008, the greater demand for Chicago wheat futures contracts generated by index traders was a significant factor in the relative increase in the wheat futures price compared to the cash price (the basis) during that period. In addition, a significant cause of the resulting price disparity between the futures and cash markets, which was far greater than the normal gap between futures and cash prices, was the purchases of Chicago wheat futures by index traders.

#### **E. Undue Burden on Interstate Commerce**

The ongoing pricing discrepancy between wheat futures and cash market prices has exacerbated many of the recent economic difficulties facing farmers, grain elevators, grain merchants, and grain end-users.

Over the past few years, the prices of many agricultural commodities – like the prices of commodities in general – experienced an unprecedented spike and subsequent collapse. For example, the cash price of wheat rose from just over \$3 per bushel in mid-2006, to over \$11 per bushel in early 2008, before collapsing to about \$3.50 per bushel at the end of 2008. Figure ES-4 shows the average daily cash price of wheat from 2000 to 2008, including the spike in the price of wheat during 2007 and 2008.



**Figure ES-4.** The average daily cash price of soft red winter wheat, the type of wheat traded on the Chicago Mercantile Exchange. Chart prepared by Permanent Subcommittee on Investigations. Data source: MGEX (daily cash index price).

A wide variety of factors contributed to the price volatility in the cash market for wheat, including poor weather, changes in agricultural productivity, an increasing demand for commodities in developing countries, changing dietary habits, increasing energy prices, and changes in the value of the dollar compared to other currencies.

Wheat prices in the cash market rose steadily from 2004 to 2008, in part due to steep increases in the price of energy, particularly oil, gasoline, natural gas, and diesel fuel, which sharply increased the costs of farming, transporting grain to markets, and grain processing. Although grain prices in the cash market eventually rose to record highs, farmers and grain merchants often were unable to realize the benefits of those higher prices due to the higher costs. In March 2009, for example, USDA reported that although wheat was selling for very high prices by historical standards, the increase in fuel and fertilizer costs had “offset this unprecedented runup in wheat prices for producers.”

During this same period, futures prices also rose. The steep increases in cash and futures prices severely affected the grain industry in several ways. First, higher futures prices resulted in higher margin calls for wheat farmers, grain elevators, and other sellers of wheat that had hedged in the futures markets, requiring them to make much larger cash outlays than normal. The National Grain and Feed Association estimated, for example, that a typical grain elevator faced a 300% increase in hedging costs in 2008, compared to 2006. It stated that “recent commodity price increases have led to unprecedented borrowing



by elevators – and unprecedented lending by their bankers – to finance inventory and maintain hedge margins.” According to the Federal Reserve Bank of Kansas City, in the first quarter of 2008, the Farm Credit System “raised \$10 billion in funds through the sale of debt securities to meet increasing demand from elevators and other processing and marketing entities.” In April 2008, the Federal Reserve Bank of Kansas City reported that nearly one-quarter of all grain elevators it surveyed were struggling to acquire the cash needed to manage margin calls; about 40% stated they had “enough cash to just manage current margin calls.”

The cash flow problems confronting many grain elevators directly affected farmers, as those elevators began to reduce their cash purchases, pull back on forward contracts offered to farmers, and lower the cash prices offered for crops. Some began to require farmers to pre-pay for seed and fertilizer, causing cash flow problems for farming operations. Farmers participating directly in the futures market also were subject to rising margin calls. One wheat farmer explained, “If you’ve got 50,000 bushels hedged and the market moves up 20 cents, that would be a \$10,000 day. If you only had \$10,000 in your margin account, you’d have to sit down and write a check. You can see \$10,000 disappear overnight. . . . Everybody has a story about a guy they know getting blown out of his hedge.”

Other problems arose from the unusually large and persistent gap between the futures and cash prices for wheat and the failure of the two prices to converge as futures contracts expired. This persistent pricing difference and lack of convergence meant that farmers, grain elevators, grain merchants, and others who had used the futures market to hedge their future sales found that when they went to sell their wheat, the cash prices were much lower than they had anticipated based upon the futures market. This persistent price gap significantly impaired the ability of farmers and others to protect themselves from declining prices during the dramatic price decreases experienced during the second half of 2008. It also meant that wheat industry participants could no longer rely on the futures markets to reliably price their crops and effectively manage their price risks over time.

In a properly functioning futures market, futures and cash prices converge as futures contracts near expiration. Otherwise, if one price were higher, a trader could buy the commodity in the lesser-priced market and immediately sell it in the higher-priced market for a quick profit. Those types of transactions would soon equalize the two prices. But on many occasions during the last few years in the Chicago wheat market, the two prices have not converged.

One key reason is that the large price disparity between the cash and futures price makes it much more profitable for grain merchants to

buy grain in the cash market, hold onto it, and then sell it later – at the price of the higher-priced futures contracts – than engage in the type of transactions described above between the cash and futures market that would make the two prices converge. In addition, the large price disparity means that merchants who already have grain in storage and have hedged that grain by selling futures contracts could suffer a loss if they decided to actually sell their grain in the cash market, because they also would have to buy back the futures contract at a higher price than they could get for selling their grain in the cash market.

Virtually all of the traders interviewed by the Subcommittee, from all perspectives within the grain business, identified the large presence of index traders in the Chicago market as a major cause of the price convergence problem. This ongoing problem indicates that at a fundamental level the Chicago wheat futures market no longer effectively serves the needs of many wheat growers or commercial wheat users.

Still another set of problems caused by excessive speculation in the wheat market and the disconnect between wheat futures and cash prices affects the federal crop insurance program. Federal crop insurance, which is supported with taxpayer dollars, is available to farmers who want to cover potential financial losses due to bad weather or crop disease. Several types of federal crop insurance use futures prices to determine how much money should be paid to a farmer who has purchased coverage and suffered a loss in crop income. Futures prices are used in the formulas that calculate both the insurance premiums to be paid by farmers and the indemnity payments made to farmers after an insurance claim. Because they are included in the calculations, futures market prices that are significantly higher than actual cash prices impair the accuracy of the insurance formulas and can inflate the final figures. Futures prices that are much higher than the prices in the cash market and that do not closely follow the prices in the cash market can increase both the crop insurance premiums paid in part by farmers and can either increase or decrease the ultimate insurance payout to the farmer – thereby either resulting in too large a payout from a taxpayer-funded program or too small a payout to the farmer who has paid for the insurance. Either scenario undermines the effectiveness of the crop insurance program.

The ongoing large gap between wheat futures prices and cash prices is a problem of intense concern to the wheat industry, the exchanges, and the CFTC. The CFTC has conducted several public hearings and recently formed a special advisory subcommittee to make recommendations on how best to address the problem. The Chicago exchange has amended its wheat contract in several respects – to provide for additional delivery locations, to increase the storage rate for wheat, and to change certain specifications for deliverable wheat – in an effort

to improve trading and create a more active cash market that will force cash and futures prices to converge.

These actions to date, however, do not address one of the fundamental causes of the problem – the large presence of index traders in the Chicago wheat market. These index traders, who buy wheat futures contracts and hold them without regard to the fundamentals of supply and demand in the cash market for wheat, have created a significant additional demand for wheat futures contracts that has as much as doubled the overall demand for wheat futures contracts. Because this significant increase in demand in the futures market is unrelated to any corresponding supply or demand in the cash market, the price of wheat futures contracts has risen relative to the price of wheat in the cash market. The very large number of index traders on the Chicago exchange has, thus, contributed to “unwarranted changes” in the prices of wheat futures relative to the price of wheat in the cash market. These “unwarranted changes” have, in turn, significantly impaired the ability of farmers and other grain businesses to price crops and manage price risks over time, thus creating an undue burden on interstate commerce. The activities of these index traders constitute the type of excessive speculation that the CFTC should diminish or prevent through the imposition and enforcement of position limits as intended by the Commodity Exchange Act.

#### **F. Trading Limits on Index Traders**

The Commodity Exchange Act (CEA) directs the CFTC to prevent excessive speculation in the futures markets. Specifically, Section 4a(a) of the CEA requires the CFTC to establish and maintain “position limits” on commodity traders to prevent the undue burden on interstate commerce that results from “sudden or unreasonable fluctuations or unwarranted changes” in the price of a commodity caused by excessive speculation. Pursuant to this statutory mandate, the CFTC has established position limits for the agricultural commodities traded on futures markets such as wheat, corn, oats, and soybeans. These position limits specify the maximum number of outstanding futures contracts that any single trader can hold at any particular time. For example, the CFTC has generally prohibited any single trader from holding more than 6,500 wheat futures contracts at any one time. Prior to 2005, the maximum number of contracts that could be held at any one time was 5,000 contracts.

Over the course of many years, the CFTC has made a number of decisions that have enabled certain index traders to hold more than the current limit of 6,500 wheat futures contracts. The first set of decisions resulted in the CFTC’s granting position limit exemptions to swap dealers selling commodity index swaps. Although the CEA directs the

CFTC to impose trading limits to prevent excessive speculation, section 4a(c) of the Act also states that these limits are not to be applied to “transactions or positions which are shown to be bona fide hedging transactions or positions.” The CEA provides the CFTC with the discretion to define the term “bona fide hedging transaction” in order to “permit producers, purchasers, sellers, middlemen, and users of a commodity or a product derived therefrom to hedge their legitimate anticipated business needs for that period of time into the future for which an appropriate futures contract is open and available on an exchange.”

Initially, the CFTC limited the concept of a bona fide hedging transaction to transactions directly linked to the business needs of the producers, marketers, and users of a physical commodity in the cash market. But after Congress directed the CFTC, in 1986, to consider expanding its definition to include persons using the futures markets to manage risks associated with financial investment portfolios, the CFTC issued a series of clarifications and interpretations which, in effect, expanded the definition to include trading strategies to reduce financial risks, regardless of whether a matching transaction ever took place in a cash market for a physical commodity.

In 1991, using this expanded definition, the CFTC granted the first exemption from speculative trading limits to a swap dealer seeking to buy futures contracts to hedge its financial exposure to commodity index swaps it had sold to third parties. According to CFTC data provided to the Subcommittee, the CFTC has currently issued four hedge exemptions to swap dealers seeking to buy wheat futures. Those exemptions permit the swap dealers to exceed the 6,500 position limit and hold up to 10,000, 17,500, 26,000, and 53,000 wheat futures contracts to hedge their exposures to commodity index swaps that reference wheat futures prices. In addition, in 2006, the CFTC staff took another step by issuing two “no-action” letters permitting the manager of one index-related exchange traded fund (ETF) to hold up to 11,000 wheat futures contracts and another fund manager to hold up to 13,000 wheat futures contracts.

Together, these hedge exemptions and no-action letters permit six index traders to hold a total of up to almost 130,000 wheat futures contracts at any one time. Absent these waivers from the position limits, these six index traders would have been limited to a total of about 39,000 wheat futures contracts at a time, or less than one-third of the contracts that they are now permitted to hold.

CFTC data indicates that, from 2006 to mid-2008, the total number of outstanding contracts (long open interest) attributable to commodity index traders in the wheat market was about 200,000 contracts. That means that the six index traders granted waivers

from the trading limits may have held up to about 60% of all the outstanding wheat contracts held by index traders.

In directing the CFTC to consider granting position limit exemptions to firms using the futures markets to manage price risks associated with financial portfolios, Congress emphasized that the Commission's actions should remain consistent with its mandate to prevent excessive speculation from causing unreasonable or unwarranted changes in the prices of commodities traded on the futures exchanges. Because the large amount of index investments in the Chicago wheat futures market have been one of the major causes of "unreasonable or unwarranted" changes in wheat futures prices relative to cash prices, the granting of exemptions and waivers to index traders is inconsistent with the CFTC's statutory mandate to prevent excessive speculation on futures exchanges. Accordingly, the Report recommends that the CFTC no longer waive position limits for index traders and, in addition, begin an orderly phase-out of the existing waivers.

If the CFTC were to phase out the exemptions and waivers granted to index traders in the wheat market, those traders would become subject to the position limits for wheat futures contracts that generally apply and would be unable to hold more than 6,500 wheat contracts at any one time. The strict enforcement of the 6,500 contract limit should reduce the presence of index traders in the Chicago wheat futures market and help bring the futures market into better alignment with the cash market.

Restoring the 6,500 position limit to index traders may not, however, fully solve the pricing problems in the Chicago wheat futures market and eliminate the problems in the market exacerbated by excessive speculation. CFTC data indicates that at most 60% of the total outstanding wheat contracts (long open interest) which can be attributed to index investors would be affected by restoring the 6,500 limit. If pricing problems persist in the wheat market after the phase-out of these waivers, and after implementation of other actions being taken by the Chicago exchange, the CFTC should consider imposing additional restrictions on index traders to reduce their presence, such as by restoring the pre-2005 position limit of 5,000 wheat contracts per index trader to reduce their aggregate impact on wheat futures prices.

#### **G. Other Commodities**

The wheat market illustrates how a large amount of index trading on a futures exchange can significantly impair the ability of the futures market to perform its primary purposes – to enable commercial market participants, including farmers, grain elevators, grain merchants, and consumers, to efficiently price their commodities and manage their price risks over time. The Subcommittee investigation was made possible in

large part by the availability of data compiled by the CFTC on index trading in the wheat market. Comparable data on index trading in non-agricultural markets, including for crude oil, natural gas, and other energy commodities, is not presently available. The data problem is due in part to the complexity of the over-the-counter (OTC) energy market, the associated difficulty in tracing index trading in that market, and the difficulty in assessing the impact of OTC energy trades on regulated energy futures exchanges. To understand the role of index trading in energy and other non-agricultural commodity markets, the CFTC will need to improve its data collection and analysis efforts for both the OTC markets and index trading. Given the importance of this issue, despite the difficulties, the CFTC should undertake this effort to bring additional transparency to the impact of index trading on energy futures markets.

## H. Findings and Recommendations

Based upon the Subcommittee's investigation, the Report makes the following findings of fact and recommendations to diminish or prevent excessive speculation in the wheat market.

### Findings of Fact.

- (1) **Excessive Speculation in Wheat.** The large number of wheat futures contracts purchased and held by commodity index traders on the Chicago futures exchange over the last five years constituted excessive speculation.
  - (a) **Index Traders Increased Futures Prices Relative to Cash Prices.** The large number of wheat futures contracts purchased by index traders on the Chicago exchange created additional demand for those contracts and was a major contributing factor in the increasing difference between wheat futures prices and cash prices from 2006 to 2008.
  - (b) **Index Traders Impeded Price Convergence.** Over the past few years, the large number of Chicago wheat futures contracts purchased by index traders has been a major cause of the frequent failure of wheat futures and cash prices to converge upon contract expiration.
  - (c) **Unwarranted Price Changes.** The additional demand for Chicago wheat futures contracts attributable to commodity index traders contributed to "unreasonable fluctuations or unwarranted changes" in wheat futures prices, resulting in an abnormally large and persistent gap between wheat futures and cash prices (the basis). Largely as a result of index trading, the average

difference between the cash and futures price at contract expiration rose from 13 cents per bushel in 2005, to 34 cents in 2006, to 60 cents in 2007, to \$1.53 in 2008, a tenfold increase in four years.

- (d) **Undue Burden on Commerce.** The unwarranted changes in wheat prices resulting from the large amount of index trading in the Chicago wheat futures market created an undue burden on interstate commerce. This undue burden was imposed on farmers, grain elevators, grain merchants, grain processors, and others by impeding useful hedging strategies, imposing significant unanticipated costs, and providing inaccurate indications of expected prices in the wheat markets.
- (2) **CFTC Waivers Facilitated Excessive Speculation.** CFTC actions to waive position limits for commodity index traders facilitated excessive speculation in the Chicago wheat futures market. Waiving position limits for these index traders is inconsistent with the CFTC's statutory mandate to maintain position limits to prevent excessive speculation.
- (3) **Inflated Futures Prices Affect Crop Insurance.** Because federal crop insurance, which is backed with taxpayer dollars, uses futures prices in its calculations, inflated futures prices can inflate insurance premiums, whose cost is shared by farmers and taxpayers, and impair the accuracy of the formulas used to determine the payouts to farmers, resulting in either overpayments or underpayments.
- (4) **Poor Data Impedes Analysis.** There is a lack of adequate data on the number of futures contracts purchased by commodity index traders for non-agricultural commodities like crude oil. Improved data is essential to analyze the extent to which index traders may be contributing to higher futures prices and excessive speculation in crude oil and other markets.

#### **Recommendations.**

- (1) **Phase Out Existing Wheat Waivers for Index Traders.** The CFTC should phase out existing waivers, granted through exemptions or no-action letters, which permit commodity index traders to exceed the standard limit of 6,500 wheat contracts per trader at any one time, and re-apply the standard position limit designed to prevent excessive speculation in the wheat market.

- (2) **Take Further Action If Necessary.** If pricing problems in the Chicago exchange persist after the phase-out of index trader waivers and after implementation of other actions being taken by the Chicago exchange, the CFTC should consider imposing additional restrictions on commodity index traders to reduce excessive speculation, such as by imposing a position limit of 5,000 wheat contracts per index trader.
- (3) **Analyze Other Agricultural Commodities.** The CFTC should undertake an analysis of other agricultural commodities to determine whether commodity index traders have increased futures prices compared to cash prices or caused price convergence problems, and whether position limit waivers for index traders should be phased out to eliminate excessive speculation.
- (4) **Strengthen Data Collection for Non-Agricultural Commodities.** The CFTC should develop reliable data on the extent to which commodity index traders purchase non-agricultural commodity futures contracts, especially crude oil and other energy commodities. Once this data is collected, the CFTC should evaluate the impact of index trading in these markets, and whether position limits for index traders should be phased in to eliminate excessive speculation.

The following sections of this Report present detailed information on how, in recent years, the high level of commodity index trading in the wheat market constituted excessive speculation. Section II describes the wheat futures and cash markets, and recent pricing trends that have caused turmoil among wheat producers, merchants, and consumers. Section III provides general information about hedging and speculation in the commodity markets, and why price convergence is important to commercial users of the wheat market. Section IV explains how commodity index trading works, its impact on the futures markets, and how the CFTC has facilitated index trading by waiving position limits for wheat and other agricultural commodities. Section V details the evidence indicating how commodity index trading has been one of the major causes of unwarranted price fluctuations and an undue burden on interstate commerce, and thereby constituted excessive speculation in the wheat market. Section VI describes how inflated futures prices affect the federal crop insurance program.



*"No man qualifies as a statesman who is entirely ignorant of the problems of wheat."*

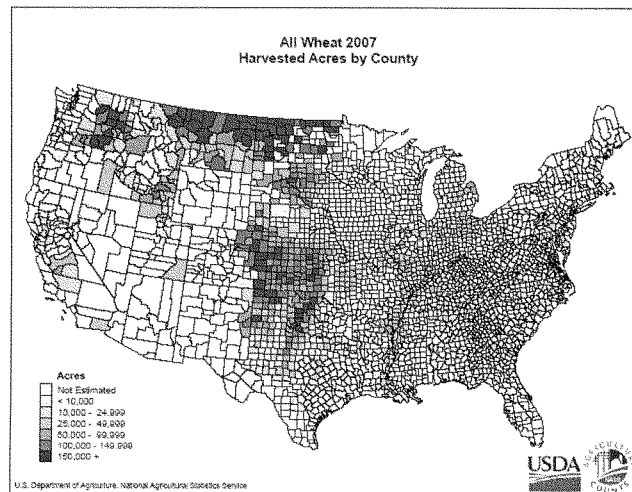
--Socrates (469-399 B.C.E.)

## II. THE U.S. WHEAT MARKET

### A. U.S. Wheat Production

Wheat is a commodity of critical importance to the U.S. and global economy. Wheat provides essential ingredients for the most basic of foods that we eat: breads, cereals, pasta, cakes, cookies, and other baked goods. It is no exaggeration to declare that "grain is the only resource in the world that is even more central to modern civilization than oil."<sup>5</sup>

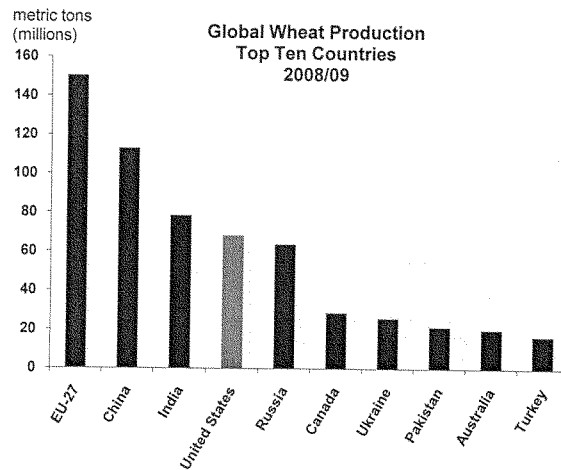
Wheat is grown on approximately 160,000 farms throughout the United States. The largest areas of wheat crops are located in the northern and central plains, the Pacific northwest, and the Midwest. Figure 1 shows the number of harvested acres of wheat in the United States, by county.



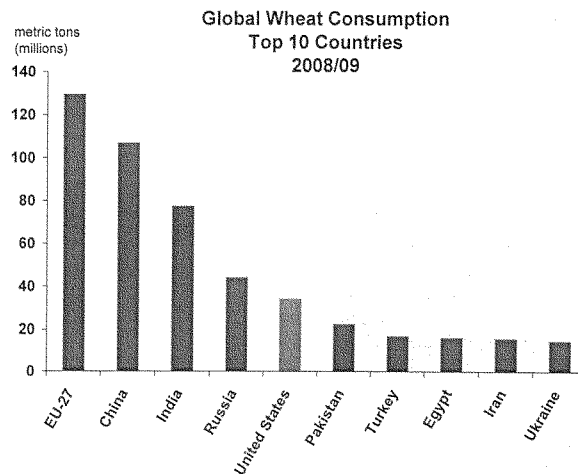
**Figure 1.** Wheat, harvested acres by county. Data source: USDA National Agricultural Statistical Service.

<sup>5</sup> Dan Morgan, *Merchants of Grain*, at p. 13 (Penguin, 1980).

Since the latter part of the 19th Century, the United States has been one of the leading global producers and consumers of wheat. (Figures 2 and 3).

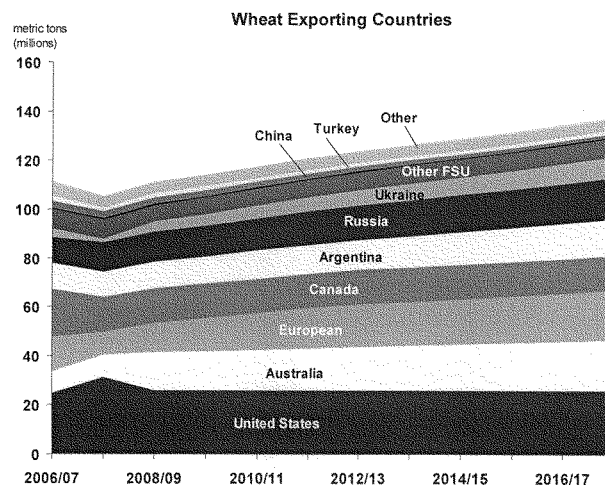


**Figure 2.** Wheat production of top ten wheat-producing countries, 2008-09. Total global production for 2008/09 is estimated to be 683 million metric tons. Data source: USDA Foreign Agricultural Service, World Wheat Production, Consumption, and Stocks, estimate as of 2/10/09.



**Figure 3.** Global Wheat Consumption, 2008-09. Total global consumption for 2008/09 is estimated to be 652 million metric tons. Data source: USDA Foreign Agricultural Service, World Wheat Production, Consumption, and Stocks, estimate as of 2/10/09.

During the 20th Century, the United States was often the primary supplier of wheat to other countries suffering through war, drought, and famine. “A number of different countries have surpluses of oil or bauxite, or iron ore. But grain surpluses are found in only a handful of nations, and the United States is one of them. In agriculture, there is only one superpower.”<sup>6</sup> The large amount of wheat exported from the United States helps the U.S. trade balance, as well as fosters mutually beneficial relationships with other nations engaged in global trade and commerce. Although in recent times the United States’ market share of global wheat production and consumption has fallen due to increased global consumption and production, the United States remains the leading global exporter of wheat. (Figure 4).



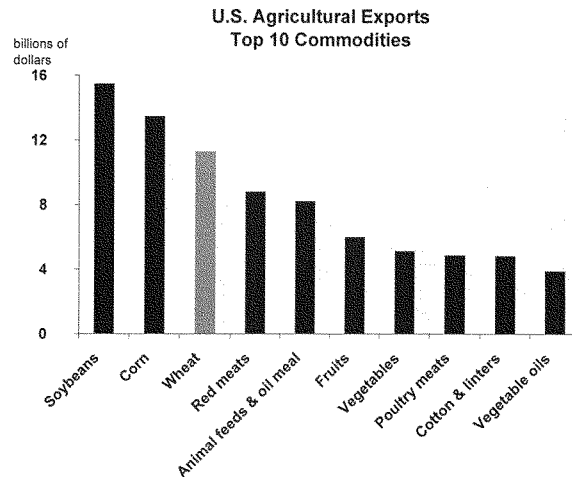
**Figure 4.** Wheat Exporting Countries, current and projected. Data source: USDA Economic Research Service, World Wheat Trade, Table 35.

U.S. agricultural exports make a significant positive contribution to the nation’s balance of trade. In 2007, the value of agricultural commodities exported from the United States totaled approximately \$81 billion, representing about 8% of total U.S. exports. In a year when the United States ran a trade deficit totaling over \$900 billion, the net trade of agricultural commodities generated an \$18 billion surplus.<sup>7</sup> Among

<sup>6</sup> *Id.*, at p. 35.

<sup>7</sup> U.S.D.A. Economic Research Service, Foreign Agricultural Trade of the United States (FATUS), Value of U.S. trade – agricultural, nonagricultural, and total – and trade balance, by calendar year, last visited 3/9/09.

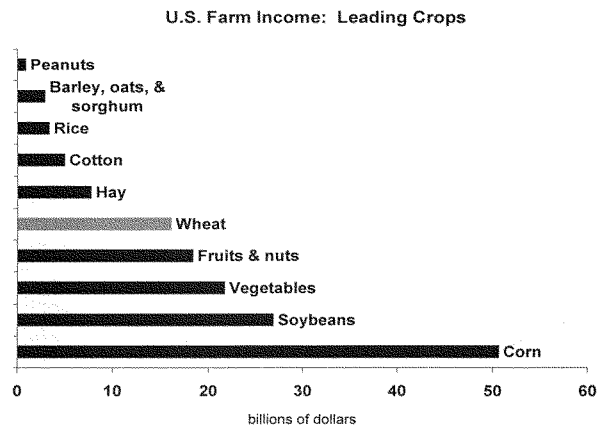
U.S. agricultural exports, wheat ranks third, following soybeans and corn. (Figure 5).



**Figure 5.** Value of top 10 U.S. agricultural exports, 2008. Export values for red meats, fruits, vegetables, and poultry meats include export values of derivative products. Data source: USDA, Economic Research Service, Foreign Agricultural Trade of the United States, U.S. agricultural exports, year-to-date and current months, <http://www.ers.usda.gov/Data/FATUS/#monthly>.

According to the most recent Census of Agriculture, in 2007, U.S. farms generated a total of nearly \$11 billion in sales of wheat.<sup>8</sup> In 2008, the wheat crop produced over \$16 billion in sales. Corn and soybeans were the only individual crops that produced greater revenue for U.S. farmers. (Figure 6).

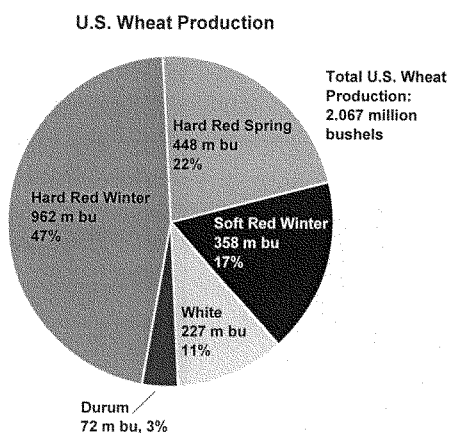
<sup>8</sup> U.S.D.A. Census of Agriculture, 2007, Volume I, Chapter I: U.S. National Level Data, Table 2.



**Figure 6.** U.S. Farm Income, Leading Crops. The USDA estimates that greenhouses and nurseries generated an additional \$17.5 billion in income in 2008. All other crops generated an estimated \$26 billion in farm income. Data source: USDA Economic Research Service, Data Sets, Farm Income: Data Files.

### B. Types of Wheat

Five basic types of wheat are grown in the United States: hard red winter (HRW), hard red spring (HRS), soft red winter (SRW), durum, and white. Figure 7 shows the relative amounts of the wheat varieties grown in the United States during the crop year 2007-08.



**Figure 7.** Types and amounts of wheat grown in the United States in 2007-08. Source: USDA, Economic Research Service, Wheat Data: Yearbook Tables, Table 6.

The varieties of wheat are differentiated primarily by the hardness, color, and protein content of the grain. Table 1 describes the various types of wheat, their protein content, and most common uses.

**Wheat Varieties, Characteristics, and Uses**

Type of Wheat	Physical Characteristics	Protein Content	Uses
Durum	Very hard; translucent, light color	High (14-15%)	Pasta, couscous, Middle Eastern flat breads
Hard Red Spring	Hard; brownish	High (13-14%)	Bread, bagels, hard rolls
Hard Red Winter	Hard; brownish	Medium-High (11-12%)	Bread; bread flours
Soft Red Winter	Soft	Low (9-10.5%)	Cakes, pie crusts, biscuits, crackers
Hard White	Hard; light color, opaque, chalky	Medium-High (similar to HRW)	Bread, brewing, Asian noodles
Soft White	Soft, light-color	Low (10%)	Pie crusts, pastry, noodles, flat breads

**Table 1.** U.S. Wheat Varieties, Characteristics, and Uses.<sup>9</sup>

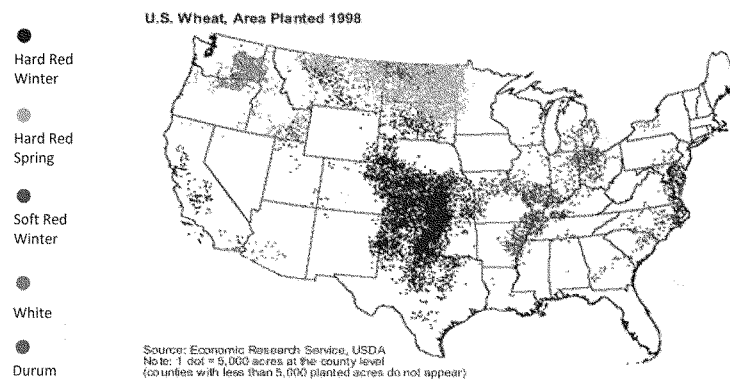
The protein content of the wheat largely determines its suitability for various products such as breads, cakes, pastries, pastas, noodles, and other foods. Flour milled from wheat with a relatively high content of protein, or gluten, such as hard spring wheat, produces thicker breads that are relatively difficult to tear apart. Flour milled from wheat with a relatively low content of gluten, such as soft winter wheat, is used for products that do not need to stick together well, such as crackers and cookies.<sup>10</sup> Although the protein content of hard white wheat is similar to

<sup>9</sup> The data sources for the protein content of the various wheat varieties are: Sally Sologuk, *Durum Wheat 101: An Overview*, Milling Journal, 4th Quarter 2004, at p. 48, available at <http://www.northern-crops.com/technical/introduzum.pdf> (durum wheat); Kansas Wheat Commission – Kansas Association of Wheat Growers, *Classes of Wheat*, at <http://www.kswheat.com/general.asp?id=118>. See also Kyle Stiegert and Brian Balzer, Food System Research Group, Kansas State University, *Evaluating the U.S. Wheat Protein Complex*, at p. 6, available at <http://www.aae.wisc.edu/fsrg/publications/wp2001-5.pdf> (hard red spring and hard red winter wheats); U.S. Wheat Associates, *Soft Red Winter Wheat Quality Survey, 2006*, available at [http://www.uswheat.org/cropQualityReports/doc/26BC80F1BC58414385257214004695D0/\\$File/SRW2006.pdf?OpenElement](http://www.uswheat.org/cropQualityReports/doc/26BC80F1BC58414385257214004695D0/$File/SRW2006.pdf?OpenElement) (soft red winter wheat).

<sup>10</sup> In *Merchants of Grain*, Dan Morgan describes how Cadwallader Washburn (founder of the company that was the predecessor of General Mills) developed an innovative milling process, powered by the St. Anthony Falls on the Mississippi River, to separate the dark specks of bran that would discolor the white wheat flour during the milling of hard spring wheat. Hard spring wheat is the variety of wheat most suitable for survival in colder, northern climates. Morgan relates the significance of this invention:

that of hard red wheat, its white color and less bitter taste make it a preferable alternative to hard red wheat for certain uses. Because consumers tend to prefer whiter and sweeter tasting breads and pastas, hard white wheat often is a preferred source of flour for these products.<sup>11</sup>

Figure 8 displays the geographic locations where each type of wheat is grown.



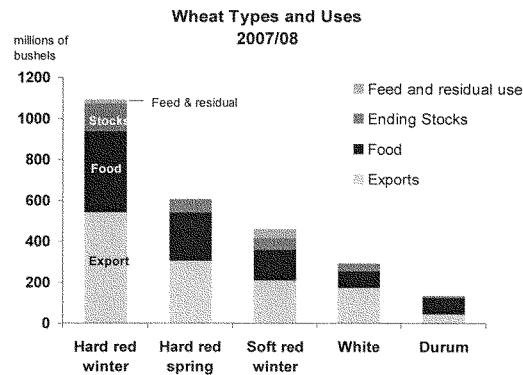
**Figure 8.** U.S. Wheat Production, by Variety by County. Data source: USDA, Economic Research Service, Briefing Rooms, Wheat: Maps; at <http://www.ers.usda.gov/Briefing/Wheat/maps.htm>.

"The 'new process' milling reversed the economic position of Minnesota flour on the bakers' scale of preferences, not only in the United States but in England as well. Once it could be sold as a whole product free from impurities, Minneapolis flour became the premium flour of the United States. The reason was that the spring planted wheats of Minnesota and the Dakotas, ripened as they were in the dry, sunny climate, contained a higher percentage of protein, or 'gluten,' than soft eastern wheats. This was an advantage of enormous economic significance. Gluten gives flour the capacity to absorb water and, when yeast is added, to rise. To bakers this meant that hard, spring wheat flour produced more loaves per pound. To consumers, the benefit was bread that tended to stay fresh longer."

Washburn's innovation soon "leaked out" and was also adopted by Charles Pillsbury, founder of the company that bears his name. *Merchants of Grain*, at 86.

<sup>11</sup> It also is a preferred choice for Asian noodles. See, e.g., USDA, Economic Research Service, *Hard White Wheat: Changing the Color of U.S. Wheat?*, Agricultural Outlook, August 1998; Whole Grains Council, Whole White Wheat FAQ, at <http://www.wholegrainscouncil.org/whole-grains-101/whole-white-wheat-faq>.

Figure 9 displays the uses of these wheat varieties.



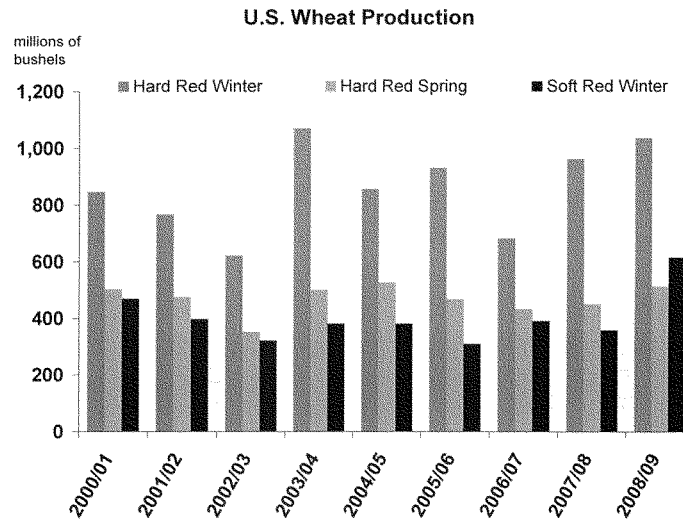
**Figure 9.** Uses of five main wheat varieties, 2007-08. Data source: USDA, Economic Research Service, Wheat Data: Yearbook Tables, Table 6: Wheat Classes, Supply and Disappearance.

### C. U.S. Wheat Supplies

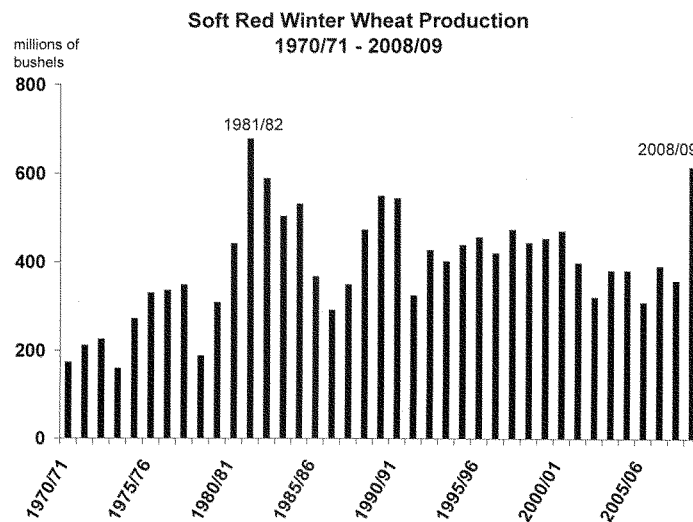
The amount of a particular crop that is grown is highly sensitive to the price signals in the market for that crop. When the price of a crop such as wheat is relatively high – such that the returns for planting wheat are expected to be higher than the returns from planting other crops – farmers will plant more wheat; when prices are relatively low, farmers will devote fewer acres to wheat than to other crops.

Figure 10 shows the sizes of the three largest U.S. wheat crops – hard red winter, hard red spring, and soft red winter – planted over the past nine crop years. Due to extremely dry conditions in the Great Plains states, the hard red winter wheat crop for 2005/06 was the second-smallest in 30 years. As a result of the record-high wheat prices over the previous two crop years, in late 2007, farmers planted more acres of all types of wheat. A near-record amount of soft red winter was produced for the 2008/09 crop year. (Figure 11).



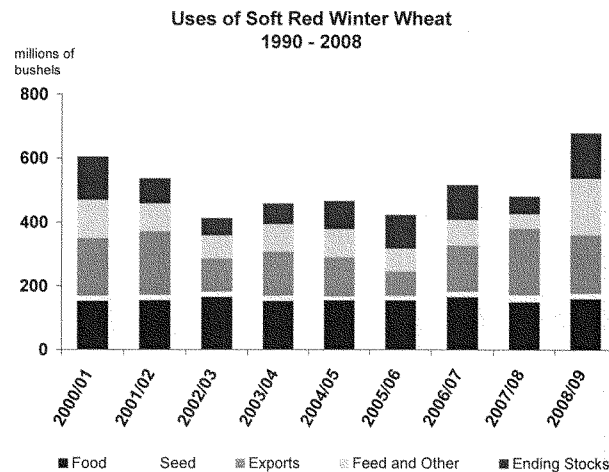


**Figure 10.** U.S. wheat production, 2000-2008. Data source: USDA Economic Research Service, Wheat Data: Yearbook Tables, Table 1.



**Figure 11.** The 2008/09 soft red winter wheat crop is anticipated to be the second largest on record. Data source: USDA Economic Research Service, Wheat Data: Yearbook Tables, Table 1.

The near-record crop of soft red winter wheat harvested in the summer of 2008 helped accelerate the fall of the price of wheat during the latter half of 2008. With such a large harvest, inventories of wheat rose, prices fell, and large amounts of wheat were used as animal feed. (Figure 12).



**Figure 12.** A near-record crop of soft red winter wheat in 2008/09 resulted in additional use of wheat for animal feed and greater-than-normal amounts of wheat placed in storage at the end of the crop year. Data source: USDA Economic Research Service, Wheat Data: Yearbook Tables, Table 9.

#### D. The Cash and Futures Markets for Wheat

The development of the wheat market in the United States has followed the general economic and political development of the nation as a whole. As the frontiers of the nation expanded westward throughout the 19th Century, settlers in the new territories found the land highly suitable for growing grains such as wheat and corn. As farmlands progressed westward, new canals and railroads were built to carry these crops to the population centers back east, mills were built near those routes to process the wheat into flour, and centralized markets developed in Chicago and elsewhere to facilitate the buying and selling of wheat and wheat products. Much of the basic structure of the U.S. wheat markets today traces its origin to the manner in which these markets evolved during the 19th Century.

### 1. Cash Markets for Wheat

The primary market for the buying and selling of wheat is the cash market. Virtually all transactions that result in a physical transfer of wheat take place between sellers and buyers exchanging cash for wheat. The futures market is rarely used for the actual buying and selling of wheat, or for the delivery of wheat from a seller to a buyer.

There is no centralized cash market for wheat or other types of grain. Rather, the cash market exists wherever a grain elevator or grain merchant posts a price or makes an offer to purchase grain, wherever a farmer or grain merchant makes an offer to sell, or wherever grain is bought, sold, or stored. These types of transactions take place all over the country, at all times of the day. Transactions in the cash market may or may not be accomplished through standardized contracts, although oftentimes they are.

Typically, country elevators, grain merchants, and millers will post prices on a daily or regular basis for the amounts of grain that they anticipate for their immediate or near-term needs. Elevators and merchants often will post a schedule of prices, depending on when the crop is to be delivered. Cash market prices vary considerably from season to season and from location to location. At any particular time, factors influencing the cash price at a particular location may include local soil and weather conditions as they may affect the quantity or quality of the wheat at that location, local supply and demand factors, such as the availability of alternative or substitute grains at that location, the particular needs of local elevators or processors, and transportation costs to markets or processing facilities.

Cash prices may be quoted as an absolute price, particularly if the contract is for immediate delivery of wheat. For example, the cash price for immediate delivery might be \$4 per bushel. A contract for wheat that is to be delivered at a specified time in the future (termed a “forward” contract) often is based upon the current price of the futures contract that is closest in time to the time of delivery. Some forward contracts specify a particular discount or premium to be applied to the futures price; others provide that the discount or premium is to be determined at the time of delivery, based upon prevailing market conditions when the wheat is delivered.

Farmers often have the option of selling their crop in the cash or futures market, according to the current prices in either market, or

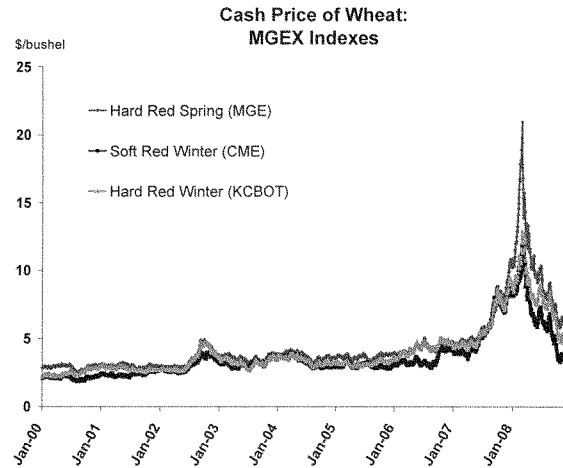
storing it themselves or at an elevator for later delivery and sale. A farmer's income depends to a large degree on the farmer's ability to determine the most profitable option for the sale of his or her crops.

To foster transparent and efficient markets, the U.S. Department of Agriculture publishes daily, weekly, monthly, and annual reports on the price of wheat and numerous other crops in various cash markets. Other organizations also provide pricing reports. Because of the highly localized nature of the cash market, these types of reports are a valuable source of information about the prevailing prices at or near a particular location.

For hard red winter, hard red spring, and soft red winter wheats, as well as for corn and soybeans, the Minneapolis Grain Exchange (MGEX) offers a daily "cash index" contract for trading as a futures contract. The daily index prices for these commodities is determined by surveying and calculating the average of numerous cash prices for each crop around the region in which it is grown. The Minneapolis exchange explains: "DTN [a large publisher of real-time market data] collects nearly 700 bids each day for hard red winter wheat, 325 bids for hard red spring wheat, 550 bids for soft red winter wheat, 2,450 bids for corn and 2,250 bids for soybeans with representation from elevators around the country."<sup>12</sup> The MGEX agricultural index contracts can therefore be considered to represent a national average cash price for each of the covered commodities. Figure 13 presents the value of the MGEX index price over the last eight years for each of the three types of wheat traded on futures exchanges: hard red winter, hard red spring, and soft red winter. The data shows, for all three types of wheat, a significant price spike in 2007-08.

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<sup>12</sup> Minneapolis Grain Exchange, MGEX Agricultural Index Futures and Options, FAQ; at <http://www.mgex.com/documents/2007indexFAQ4.08.pdf>. Although the Minneapolis exchange offers these contracts for trading as futures contracts, there is virtually no trading in any of these futures contracts.



**Figure 13.** Average cash prices of wheat traded on futures exchanges, as calculated by the MGE index. Data source: MGEX.

## 2. Futures Markets for Wheat

Following the Civil War, the rapid expansion of the country westward, together with the industrial revolution, transformed the United States into a global agricultural and industrial power, often with wrenching consequences for American farmers, workers, and communities.<sup>13</sup> American farmers no longer produced wheat just for their own sustenance or a local market, but rather became part of a much larger international network for buying and selling grains and other foodstuffs. The price a farmer could get for grain was no longer the result of a simple bargain between the farmer and the local grain dealer, but rather was based on many factors totally out of the farmer's control, such as the latest trends in global supply and demand.

As the U.S. wheat market expanded and U.S. farmers and merchants began to market their wheat globally, futures markets evolved

<sup>13</sup> "Farmers, no longer relatively self-sufficient, were bewildered by the new economic conditions. They were involved now in a world-wide economic network, the impersonal price-and-market system, which they understood only dimly. Slowly and with great difficulty they learned to cope with these new problems, to calculate costs and prices with business-like efficiency, and to join together to deal with powerful market forces." Samuel P. Hays, *The Response to Industrialism, 1885-1914* (University of Chicago Press, 1957), at p. 31. "Between 1815 and 1860 the character of American agriculture was transformed. The independent yeoman, outside of exceptional or isolated areas, almost disappeared before the relentless advance of commercial agriculture." Richard Hofstadter, *The Age of Reform* (Alfred A. Knopf, 1955), at p. 38.

as a means to manage the unpredictable risks merchants faced in buying, storing, and selling wheat in a global market. When it was first established in 1848, the Chicago Board of Trade (CBOT) was primarily a cash market for a wide variety of agricultural commodities, including grains<sup>14</sup> During the 1850s, increasing supplies of grain and other crops coming into Chicago due to the expansion of farmlands, the building of railroads and canals connecting the new territories to Chicago and other cities, and increasing international demands for U.S. wheat, fostered the increased use of forward contracts to store and market that wheat. A leading professor of agricultural economics, Thomas Hieronymus, explains:

“As commerce developed and required the accumulation of inventories, particularly of seasonally produced crops, merchants and processors found themselves with problems that were best managed by forward contracting. This forward contracting developed into standard procedures that were eventually codified and formalized into futures trading.”<sup>15</sup>

Once the making of a contract became separated from the delivery of the commodity, as is the case with forward contracts, it became possible for grain merchants and other middlemen to speculate as to the ultimate value of those contracts, and to attempt to profit from the changing value of those contracts. As the amount of forward contracting grew, so did the amount of speculation in the value of those contracts. During the Civil War, speculation became so rampant that the CBOT developed rules to govern the conduct of its members and to ensure the performance of contracts made on the exchange.<sup>16</sup>

<sup>14</sup> William G. Ferris, *The Grain Traders, The Story of the Chicago Board of Trade* (Michigan State University Press, 1988), at p. 9.

<sup>15</sup> Thomas A. Hieronymus, *Economics of Futures Trading* (Commodity Research Bureau, 1977), at p. 93. (available at University of Illinois [farmdoc](http://www.farmdoc.uiuc.edu/irwin/links_archive.asp) archives, at [http://www.farmdoc.uiuc.edu/irwin/links\\_archive.asp](http://www.farmdoc.uiuc.edu/irwin/links_archive.asp); hereinafter cited as “farmdoc archives”). The CBOT began to trade forward contracts in 1851. In 1859, it received a charter from the State of Illinois to establish and enforce grain standards. *Id.* The development of grain standards and grain quality control methods in grain warehouses greatly facilitated the usefulness of standardized contracts. *See* Ferris, at p. 19.

<sup>16</sup> In 1863, the CBOT adopted a rule to authorize the expulsion of any member who failed to comply with the terms of a contract. In 1865, the CBOT published the “General Rules of the Board of Trade” which included, for the first time, the requirement to post margins, and rules for the standardized delivery and payment procedures for future deliveries under contracts. “By this time all of the essential elements of futures trading were present. . . . We could date the origin of modern commodity futures trading as October 13, 1865 if it is, indeed, desirable to attach a single date to what was actually an evolutionary process.” Hieronymus, at p. 76. In 1883, the CBOT introduced the first clearinghouse to facilitate the offsetting of trades amongst its members. In 1891, the Minneapolis Grain Exchange created the first complete clearinghouse

The CBOT Annual Report for 1864 reflects how the nature of trading already had shifted from strictly cash transactions to speculative trading:

“It is true that speculation has been too much the order of the day, and buyers and sellers of ‘long,’ ‘short,’ and ‘spot,’ have passed through all the gradations of fortune from the lower to the higher ground, and in many instances have returned to the starting point, if not to a step lower, but it is to be hoped that with the return to peace this fever of speculation will abate and trade will be conducted on a more thoroughly legitimate basis.”<sup>17</sup>

From the beginning of futures trading in the mid-19th Century until 2008, the CBOT was the leading futures exchange for wheat, other grains, and agricultural commodities, including corn and soybeans.<sup>18</sup> In 2008, the CBOT merged with the Chicago Mercantile Exchange (CME).

**Three Futures Exchanges.** Today, there are three futures markets for wheat in the United States, each specializing in a particular type of wheat.<sup>19</sup> Soft red winter wheat is traded on the CME, hard red winter wheat is traded on the Kansas City Board of Trade (KCBOT), and hard red spring wheat is traded on the MGEX.

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system, by also making the clearinghouse the counterparty to each transaction on the exchange. Anne E. Peck, *The Economic Role of Traditional Commodity Futures Markets* (American Enterprise Institute, 1985), at p. 4-6 (available in [farmdoc](#) archives).

<sup>17</sup> Reprinted in G. Wright Hoffman, *Future Trading Upon Organized Commodity Markets in the United States*, University of Pennsylvania Press (1932), at p. 30.

<sup>18</sup> See, e.g., Ferris, *The Grain Traders, The Story of the Chicago Board of Trade*.

<sup>19</sup> At one time, futures exchanges for the trading of grain were also located in Baltimore, Buffalo, Cincinnati, Duluth, Indianapolis, Milwaukee, New York, Omaha, Peoria, Philadelphia, Portland, Seattle, St. Louis, and Toledo. *Report of the Federal Trade Commission on The Grain Trade, Vol. II, Terminal Grain Markets and Exchanges* (1920), at p. 204. Several exchanges, including the MGEX, have offered futures contracts for durum wheat and white wheat but have been unable to sustain sufficient liquidity to continue trading those types of wheat.

### Wheat Futures Exchanges and Contracts

Exchange:	Chicago Mercantile Exchange (CME)	Kansas City Board of Trade (KCBOT)	Minneapolis Grain Exchange (MGEX)
Type of Wheat Traded:	Soft Red Winter	Hard Red Winter	Hard Red Spring
Contract Size:	5,000 bushels (bu.)	5,000 bu.	5,000 bu.
New Crop Month:	July	July	September
Delivery Months:	Jul, Sep, Dec, Mar, May	Jul, Sep, Dec, Mar, May	Mar, May, Jul, Sep, Dec
Delivery Locations:	Chicago, IL; Toledo, OH; NW Ohio; Ohio River between Cincinnati and Mississippi River; Mississippi River below St. Louis to Memphis. <sup>20</sup>	Kansas City MO-KS; Hutchinson, KS; Wichita, KS; Salina/Abilene KS.	Minn./St. Paul, MN; Red Wing, MN; Duluth MN/Superior WI.
Daily Volume (2/09) <sup>21</sup>	79,439	10,403	2,871
Position Limits:			
Spot month	600	600	600
Single month	5,000	5,000	5,000
All months combined	6,500	6,500	6,500

**Table 2.** Wheat Futures Exchanges and Contracts. Data source: CME, KCBOT, MGEX.

Table 2 describes key features of each of these futures contracts. As the Table indicates, the structures of the three wheat futures contracts, as well as the rules under which they are traded, are very similar.

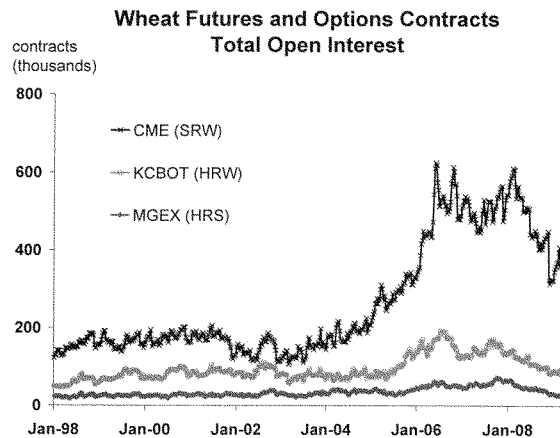
Although the amount of soft red winter wheat produced annually is significantly less than the amount of either hard red winter or hard red spring wheat, there is significantly more liquidity – meaning a greater amount of trading – in the wheat futures market in Chicago than on the other wheat futures exchanges. This increased liquidity can be seen in both the daily volume of wheat contracts traded on each exchange, as

<sup>20</sup> In 2009, a 12-county area of northwest Ohio and the Ohio River and Mississippi River delivery locations were added by the CME as part of the CME's effort to improve the convergence of the CME wheat contract.

<sup>21</sup> CME Group, Monthly Agricultural Update, February 2009; Kansas City Board of Trade, Historical Data, at [http://www.kcbt.com/historical\\_data.asp#kcbt\\_monthly](http://www.kcbt.com/historical_data.asp#kcbt_monthly); Minneapolis Grain Exchange, Market Information, Monthly/Weekly Reports, at <http://www.mgex.com/reports.html>.



shown in Table 2, or by comparing the open interest (number of contracts outstanding) on each exchange, as shown in Figure 14.<sup>22</sup>



**Figure 14.** Open interest in the three wheat futures markets. Data source: CFTC.

**Delivery Terms.** Futures contracts are rarely used to provide for the actual delivery of a commodity from a seller to a purchaser. Typically, only one or two% of all futures contracts result in the delivery of the commodity.<sup>23</sup>

Even though actual deliveries under futures contracts are rare, it is nonetheless critical that the delivery terms in the futures contract facilitate such deliveries. In his classic 1977 textbook on futures markets, Professor Hieronymus explained the importance of easy delivery terms:

“The objective in writing a futures contract is to obtain such even balance that only an amount to test the price – to keep it honest – is delivered; to make the contract so readily deliverable and receivable that there is no incentive to make

<sup>22</sup> According to traders and grain market analysts interviewed by the Subcommittee, there is no intrinsic reason why any particular wheat contract should be more liquid than the others. However, once a contract becomes highly liquid it tends to stay that way – “liquidity begets liquidity.” Moreover, many traders who trade futures contracts in other agricultural commodities on the CME find it more convenient to use the CME wheat futures contract rather than move to a wheat contract on another exchange.

<sup>23</sup> “In markets that work, delivery is rarely made and taken; futures contracts are entered into for reasons other than exchange of title.” Hieronymus, at p. 340.

or take delivery. The terms of the contract must be precisely representative of the commercial trading practices of the commodity.”<sup>24</sup>

Experience with futures markets has shown that it is very difficult to maintain trading in a futures contract with delivery terms that do not reflect commercial reality and facilitate delivery. Commercial traders are reluctant to participate in a market where it is difficult to obtain or dispose of the actual commodity.<sup>25</sup>

The three wheat futures contracts specify the type and quality of the wheat to be delivered, the date or time frame for delivery, the possible locations for delivery, and the required price at the time of delivery. The CME soft red winter wheat contract, for example, provides for the delivery of #2 soft red winter wheat, at an approved terminal elevator in Chicago, Toledo, or another approved delivery location (see Table 2). The Kansas City and Minneapolis exchanges have similar rules.<sup>26</sup> The exchange rules specify the procedure for the

<sup>24</sup> “Markets can be destroyed by the wrong delivery terms.” Hieronymus, at p. 340.

<sup>25</sup> *Id.*, at p. 342. The defunct futures market for Maine potatoes provides a good example of how an inadequate delivery process helped cause the demise of the market. The problems in the Maine potato futures market included highly volatile futures prices and a failure of the cash and futures prices to converge at contract expiration. This lack of convergence resulted from the relatively small amount of potatoes that could be delivered under the terms of the contract. “Many people have concluded that the supply of Maine potatoes deliverable on the current NYME contract is too small for healthy trading.” Allen E. Paul, Kandice H. Kahl, and William G. Tomek, *Performance of Futures Markets: The Case of Potatoes*, USDA Economics and Statistics Service, Technical Bulletin No. 1636 (1981), at p. viii (available in [farmdoc](#) archives). This USDA study warned that traders would stop using the contract unless the performance of the contract was improved, particularly with respect to convergence at contract expiration. It recommended adoption of a cash settlement process (whereby the settlement price at the expiration of a futures contract is set at the price at that time in the cash market) to “sidestep delivery difficulties and ensure that futures price and cash price converge at contract maturity.” *Id.* at p. ix. The default in the delivery of 50 million pounds of potatoes in 1976, and the failure of deliveries to pass inspection under the March 1979 contract hastened the loss of confidence in this futures market. After years of declining volume, the NYMEX delisted the Maine futures potato contract in 1986.

<sup>26</sup> The Kansas City wheat contract specifies the delivery of #2 hard red winter wheat, or #1 hard red winter wheat at a 1½ cent premium over the price for #2 hard red winter wheat. The evolution of the Kansas City futures market into a futures market solely for hard red winter wheat provides another illustration of the importance of the contract delivery mechanism. In 1940, the KCBOT began to allow the delivery of soft winter wheat, at the seller’s option. Prior to this, only hard winter wheat could be delivered. In the 1950s, the price of soft winter wheat dropped relative to the price of hard winter wheat. Given the alternative, sellers preferred to deliver the lower-priced wheat, so that by early 1953, the KCBOT contract became, in effect, a soft winter wheat contract. The contract became a less effective tool for hedging for the producers and users of hard winter wheat, and the millers who used hard winter wheat petitioned the KCBOT to once again restrict deliveries to hard red winter wheat. At first, the proposal was rejected, largely due to the belief that a soft winter wheat contract would result in a larger volume of trading. Once the would-be physical hedgers began to use the KCBOT less frequently as a result of the loss in the ability to hedge hard winter wheat, and overall trading volumes declined significantly, the KCBOT reversed itself and, since 1954, has restricted deliveries to

person making delivery to notify the exchange that delivery will be made, and for notifying the person or persons taking delivery.

For grain futures contracts, the rules of the exchanges specify a narrow category of sellers who may make an actual delivery of grain pursuant to those contracts. For wheat, only “warehouses or shipping stations” approved by an exchange may deliver wheat to satisfy a futures contract.<sup>27</sup> Presently, the CME has approved only one warehouse in Chicago (operated by Chicago & Illinois River Marketing, LLC, a Nidera subsidiary), two facilities in Toledo (operated by ADM and The Andersons), one in Burns Harbor, Indiana (operated by Cargill), two in St. Louis (operated by ADM and Cargill), and one in Alton, Illinois (operated by Gavilon) for delivery of wheat under the CME contract.<sup>28</sup> The requirement that a potential deliverer of wheat under the futures contract first be approved by the board of trade partly stems from the need to ensure that the quality of wheat delivered under the contract meets the contract specifications and partly to ensure that the persons supposed to make or accept delivery are capable of doing so. The fact that there are so few approved warehouses in Chicago and Toledo is due largely to the expense and difficulty of constructing and operating grain warehouses in the current delivery locations, particularly in an urban area like Chicago, and the fact that Chicago and Toledo are no longer major centers for commerce in wheat.

Deliveries under a wheat futures contract follow a multi-step process over several days prior to the expiration of the contract. Wheat futures contracts expire in the middle of the month – on the first business day prior to the 15th calendar day of the contract month. Beginning on the second-to-last business day of the month prior to the month in which expiration occurs, an approved firm may give notice of the firm’s intent

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hard winter wheat. Holbrook Working, *Whose Markets? Evidence on Some Aspects of Futures Trading*, reprinted in *Selected Writings of Holbrook Working* (Chicago Board of Trade, 1985), at pp. 165-176.

<sup>27</sup> The CME Rulebook sets forth the requirements for regular warehouses and shipping facilities. Among other requirements, the facility must be inspected by the Exchange, the USDA, and other governmental agencies; be provided with “modern improvements and appliances for the convenient and expeditious receiving, handling and shipping of product in bulk”; furnish accurate information to the Exchange; permit its books to be inspected; “not engage in unethical or inequitable practices”; and comply with the rules of the Exchange. CME Rulebook, Chap. 7.

<sup>28</sup> The CME has received about 40 applications for approval for warehouses as a result of its recent decision to approve delivery locations in northwest Ohio and along the Ohio and Mississippi Rivers beginning with the July 2009 contract. CME Group, Special Executive Report, S-4876, Reminder: Upcoming Approved Changes to the Wheat Futures Contract, May 15, 2009; at <http://www.cmegroup.com/company/membership/membernet/files/20090518S-4876.pdf>.

to make a delivery under the futures contract. The day on which a seller first gives notice is called “position day.” On the day following a position day, the exchange examines the outstanding long open interest (buyers) and selects those positions that have been held for the longest period of time to accept delivery. This second day of the delivery process is called “notice day.” On notice day, the holder of the long position identified by the exchange to accept delivery may either accept the delivery or decide to pass it on to another buyer.<sup>29</sup> The day following notice day is delivery day, when the shipping receipt passes to the purchaser. Once delivery is made, both the long and short open interests are closed. Any contracts still outstanding on the last day of trading are settled through delivery, at the settlement price, on the following day.

Delivery of wheat under the Chicago wheat futures contract (or any of the other wheat futures contracts) from an approved warehouse does not require the physical movement of any grain. Rather, the rights to the grain pass to the buyer in the form of a shipping certificate. Possession of a shipping certificate entitles the holder of the certificate to demand that the warehouse load the wheat upon the mode of transportation provided by the certificate holder (“load-out”), generally barge or rail. Once the holder of a shipping certificate requests load out, the warehouse then must load the grain within a period of time specified by the rules of the exchange. Until the holder of a shipping certificate requests the load out, the holder of the shipping certificate must pay the warehouse storage fees for the amount of grain stored, also at a rate specified by exchange rules.

Through this delivery process, traders may acquire grain through the contract delivery process without actually physically handling any grain. Rather, simply by holding futures contracts until expiration, traders may acquire the rights to grain stored in grain elevators, in the form of shipping certificates. These traders may then hold onto these shipping certificates, pay the storage fees, and then sell the grain later at a higher price.

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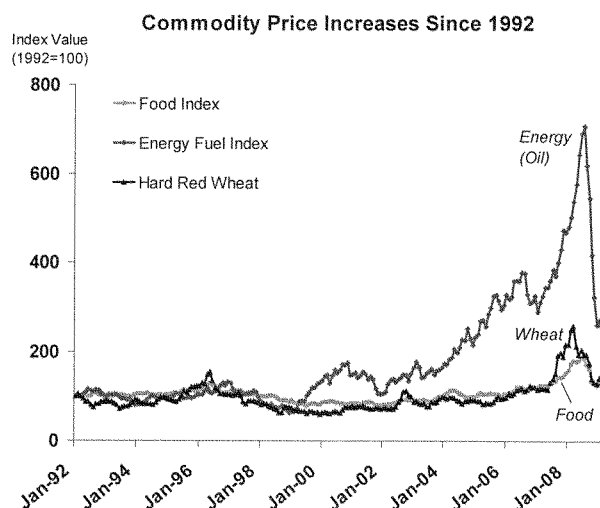
<sup>29</sup> If the holder of the long position identified by the exchange does not want to accept delivery and notifies the exchange of his or her intent to pass it on to another buyer, on the following day the exchange will select and notify the next-oldest holder of a long position to accept delivery. The day the next-in-line holder of a long position is notified becomes the new notice day. This process can continue until the day the contract expires.

## E. Recent Trends in U.S. Wheat Prices

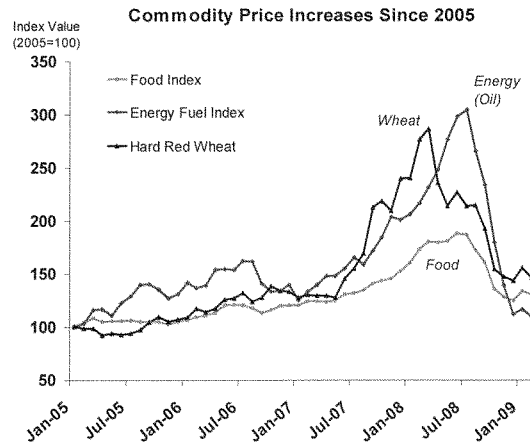
### 1. Recent Price Increases and Volatility

Because the United States is a large exporter of wheat, U.S. wheat prices are strongly influenced by global supply and demand. The price of wheat in Kansas may be influenced just as much by locusts in Australia as by a local drought. Over the past few years, a wide variety of global and domestic factors have led to unprecedented price increases and volatility in wheat and other agricultural commodities.

Figures 15a and 15b show the climb to record heights by energy, food, and wheat prices over the past several years, peaking in mid-2008, and then falling sharply during the latter half of 2008. As these figures show, over the past 15 years, the price of energy (largely mirroring the price of crude oil) has increased far more than the price of wheat or food in general. Over the past four years, however, the increases in wheat prices were nearly as steep as the increases in the price of oil. (Figure 15b).



**Figure 15a.** Commodity Price Increases since 1992. The energy price index includes the price of crude oil, natural gas, and coal, and closely follows the price of crude oil. Data source for Figures 15a and 15b: International Monetary Fund, Primary Commodity Prices; at <http://www.imf.org/external/np/res/commod/index.asp>.



**Figure 15b.** Relative prices of wheat, energy fuel, and food since 2005.

The large price increase, subsequent collapse, and abnormal price volatility during 2008 caused turmoil in the wheat markets. Media reports conveyed complaints, worries, and warnings from many sectors of the grain industry, from producers to consumers. “Anyone who tells you they’ve seen something like this is a liar,” said an official of the Farmers Trading Company of South Dakota.<sup>30</sup> An official at cereal-maker Kellogg observed, “The costs for commodities, including grains and energy used to manufacture and distribute our products, continues to increase dramatically.”<sup>31</sup> “I can’t honestly sit here and tell who is determining the price of grain,” said one Illinois farmer. “I’ve lost confidence in the Chicago Board of Trade.”<sup>32</sup> “I don’t know how anyone goes about hedging in markets as volatile as this,” said the president of MGP Ingredients which provides flour, wheat protein, and other grain products to food makers.<sup>33</sup> “These markets are behaving in ways we have never seen,” said a senior official from Sara Lee.<sup>34</sup> A

<sup>30</sup> David Streitfeld, *In Price and Supply, Wheat Is the Unstable Staple*, New York Times, February 13, 2008.

<sup>31</sup> Stephanie Antonian Rutherford, *Kellogg shrinks boxes*, Battle Creek Enquirer, June 17, 2008.

<sup>32</sup> Diana B. Henriques, *Price Volatility Adds to Worry on U.S. Farms*, New York Times, April 22, 2008.

<sup>33</sup> Ben Levisohn, *Butcher, Baker – Commodities Trader?*, Business Week, July 14, 2008.

<sup>34</sup> *Id.*

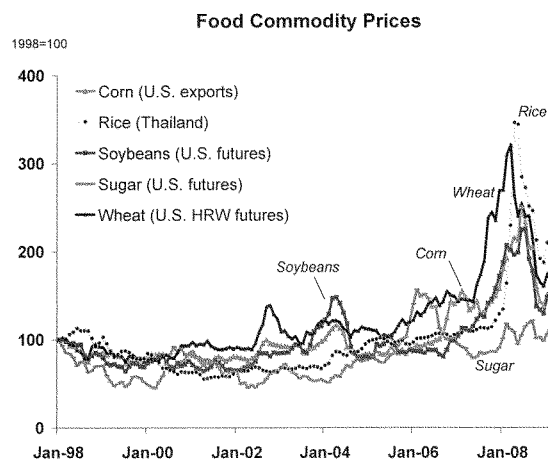
grain elevator manager warned, “Eventually, those costs are going to come out of the pockets of the American consumer.”<sup>35</sup>

Although the rise in wheat prices to record heights occurred steadily over a span of several years, the subsequent drop in prices took place over a much shorter period, about six months. Despite the sharp drop in the latter half of 2008, prices did not fall all the way back to their pre-spike levels. Many analysts project that the new equilibrium price will be higher than the equilibrium price before the spike. For example, Professors Good and Irwin write: “[U]nfolding evidence suggests that prices are indeed likely establishing a higher average than that experienced in recent history. The factors supporting this conclusion include generally tight world inventories, growing world demand for food and biofuels, and escalating cost of production.” They also state: “[C]urrent market fundamentals center on large amounts of corn used for ethanol production, suggesting that corn prices will continue to be closely tied to energy prices in the immediate future and that the price of the other two crops [wheat and soybeans] will have to be competitive with the price of corn.”<sup>36</sup>

Figure 16 shows how the price of wheat over the past decade has compared to the prices of other agricultural commodities. During this period the prices of wheat, corn, and soybeans all have followed similar patterns.

<sup>35</sup> Diana B. Henriques, *Price Volatility Adds to Worry on U.S. Farms*, New York Times, April 22, 2008.

<sup>36</sup> Darrel Good and Scott Irwin, *The New Era of Corn, Soybean, and Wheat Prices*, Marketing & Outlook Briefs, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, September 2, 2008. See also Ronald Trostle, *Global Agricultural Supply and Demand: Factors contributing to higher food commodity prices, and prospects for the future*, Economic Research Service, U.S. Department of Agriculture, Presentation to Russian Agricultural Outlook Forum, September 23-24, 2008.



**Figure 16.** Prices of selected food commodities, 1998-2009. Data source: International Monetary Fund, Primary Commodity Prices; at <http://www.imf.org/external/np/res/commmod/index.asp>.

The causes of the steep rise in commodity prices in 2008, including the role of increasing speculation in the commodity markets, became the subject of intense public scrutiny and debate.<sup>37</sup> In the first half of 2008

<sup>37</sup> See, e.g., Kevin G. Hall, *Speculators' role in crude-oil prices under examination*, Seattle Times, September 11, 2008; Jeffrey Korzenik, *Energy policy and the speculator*, Boston Globe, August 21, 2008; Sam Zuckerman, *Spotlight on investors as commodities slide*, San Francisco Chronicle, August 18, 2008; Katherine Yung, *Causes of Oil Price Swings are Debated: Is it Greedy Speculation or Simply Supply and Demand?*, Detroit Free Press, August 7, 2008; Roger Bootle, *Commodities could be the latest bubble to burst*, The Daily Telegraph, July 28, 2008; Dwight R. Sanders and Scott H. Irwin, *Futures Imperfect*, New York Times, July 20, 2008; Craig Pirrong, *Restricting Speculators Will Not Reduce Oil Prices*, Wall Street Journal, July 11, 2008; Adam Shell, *Are big bets by speculators driving up oil? Experts disagree on what's behind rising crude prices*, USA Today, July 1, 2008; Paul Krugman, *Fuels on the Hill: Congress Loves to Blame Speculators For the High Price of Oil*, Pittsburgh Post-Gazette, June 28, 2008; Joe Nocera, *Easy Target, But Not the Right One*, New York Times, June 28, 2008; Ed Wallace, *High Oil Prices: It's All Speculation*, Business Week, June 27, 2008; Jon Birger, *Don't blame the oil 'speculators'*, Fortune, June 27, 2008; Jad Mouawad and Diana B. Henriques, *Why Is Oil So High? Pick a View*, New York Times, June 21, 2008; Dale Kasler, *CalPERS profits as costs surge; While consumers fume over commodity prices, pension fund makes killing in market*, Sacramento Bee, June 20, 2008; Diana B. Henriques, *A Bill Market Sees the Worst in Speculators*, New York Times, June 13, 2008; Editorial, *Betting on the bubble*, St. Louis Post-Dispatch, June 9, 2008; *Rising tide becomes a surge that could wreck every boat; Oil prices have nearly doubled over the past two years*, Fort Worth Star-Telegram, June 7, 2008; David Cho, *Investors' Growing Appetite for Oil Evades Market Limits; Trading Loophole for Wall Street Speculators is Driving up Prices, Critics Say*, Washington Post, June 6, 2008; Alan Bjerga and Matthew Leising, *Tighter Agriculture Investing Rules; Regulator to Watch Futures Markets After Spike in Food Prices*, The Washington Post, June 4, 2008; Margot Habiby and Edward Klump, *Pickens Says CFTC Probe of Oil a 'Waste of Time'*, Bloomberg.com, June 3, 2008; David Nicklaus, *It's simple supply and demand, not a conspiracy*, St. Louis Post-Dispatch, June 1, 2008; David Ivanovich, *Are Speculators Fueling Oil Run-Up? Debate centers on investors' rush to cash in on crude*, Houston Chronicle, May 25, 2008; Steven Mufson, *Skyrocketing Oil Prices Stump Experts*, Washington Post, May 22, 2008; Lananh Nguyen and Nick Heath, *Crude*



alone, Congress held more than 40 hearings examining commodity prices, including the impact of increasing levels of speculation, most often with respect to crude oil and energy prices.<sup>38</sup> Some analysts told Congress there was a direct cause-and-effect relationship between increasing speculation in the commodity markets and higher market prices. For example, Michael W. Masters, a hedge fund manager, testified before the Senate that “institutional investors are one of, if not the primary, factors affecting commodities prices today.”<sup>39</sup> Masters noted that “in 2007 Americans consumed 2.22 bushels of wheat per capita,” while the 1.3 billion bushels represented by the 2008 wheat futures contracts stockpiled by “Index Speculators is enough to supply every American citizen with all the bread, pasta and baked goods they can eat for the next two years!”<sup>40</sup> Other analysts categorically denied that speculative investments influenced 2008 prices. For example, one 2008 federal interagency task force stated that “the activity of market participants often described as ‘speculators’ has not resulted in systematic changes in price of the last five and a half years.”<sup>41</sup>

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*Logic: Spot-Market Supplies Are Plentiful, But Futures Extend Surge*, Wall Street Journal, May 21, 2008; Mark Shenk, *Crude Oil Rises Above \$130 as Banks Increase Price Forecasts*, Bloomberg.com, May 21, 2008; Gene Epstein, *Commodities: Who's Behind the Boom?*, Barron's, March 31, 2008.

<sup>38</sup> Diana B. Henriques, *Bills to Rein in Energy Speculators Worry Financial Industry*, New York Times, July 18, 2008, at p. 1.

<sup>39</sup> Testimony of Michael W. Masters before the Senate Committee on Homeland Security and Governmental Affairs, May 20, 2008, at p. 1 (available at [http://hsgac.senate.gov/public/\\_files/052008Masters.pdf](http://hsgac.senate.gov/public/_files/052008Masters.pdf)). See also Statement of Tom Buis, President, National Farmers Union, Before the House Agriculture Committee, February 3, 2009 (available at [http://nfu.org/wp-content/2-3-09-cfic-regulation-expansion\\_house-ag.pdf](http://nfu.org/wp-content/2-3-09-cfic-regulation-expansion_house-ag.pdf)) (“As speculators created a market bubble and attitude that higher prices were set to stay, crop, livestock and dairy producers locked in higher inputs and feed costs.”).

<sup>40</sup> *Id.*, at p. 2.

<sup>41</sup> Interagency Task Force on Commodity Markets, *Interim Report on Crude Oil*, July 2008, at p. 1. See also, e.g., Merrill Lynch, *Are speculators driving commodity prices higher?*, Global Energy Weekly, June 17, 2008 (“After analyzing the available data in detail, we find no link between spec[ulative] activity and systematic price increases in commodity markets.”).

Still others took a middle position. For example, Professor Christopher L. Gilbert writes, “Because index-based investment is still a relatively recent development, empirical evidence [of price effects] remains sparse.” Gilbert then states:

“The two polar positions on the effects of futures market activity on agricultural prices both appear too simple. On the one hand, the efficient markets view that transactions which do not convey information can have no price impact is contradicted by both market experience and econometric evidence. On the other hand, purely speculative episodes, in which price movements become self-reinforcing, tend to be of short duration. Although discussion tends to focus on speculation, it is investment flows that may have resulted in the most marked effects on food prices. The size of these flows can be large relative to overall market capitalization and liquidity. Since commodity investors tend to look at the likely returns to commodities as a class, and not as likely returns on specific markets, their activities may tend to transmit upward (or downward) movements in one market

In a study that concentrated on agricultural commodities, published just prior to the price collapse near the end of 2008, the U.S. Department of Agriculture's Economic Research Service reported that no single factor, but rather "many factors have contributed to the runup in food commodity prices."<sup>42</sup> USDA provided a long list of those factors, including "increased global demand for biofuels feedstocks"<sup>43</sup> ... adverse weather conditions in 2006 and 2007<sup>44</sup> ... the declining value of the U.S. dollar, rising energy prices, increasing agricultural costs of production, growing foreign exchange holdings by major food-importing countries, and policies adopted recently by some exporting and importing countries to mitigate their own food price inflation."<sup>45</sup> The USDA report also cited a slowdown in growth in agricultural production, the increased difficulty in obtaining water for agricultural uses, rising populations, increased economic growth, and dietary shifts in developing nations, including increased meat consumption resulting in increased demand for grain and protein feeds for livestock, as prime reasons for these price increases.<sup>46</sup>

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across the entire range of commodity futures markets. This is likely to have resulted in upward pressure in the less liquid agricultural markets and to increased price correlation across markets. It may also have transmitted upward price movements in energy and metals markets into the agricultural commodities."

Christopher L. Gilbert, Università Degli Studi Di Trento, Dipartimento Di Economia, *How to Understand High Food Prices*, revision 17 November 2008; available at [http://portale.unitn.it/bpmapp-upload/download/fstore/7f0000016c9f2f72\\_186c6b2\\_11e1bdac6d3\\_-765b/23\\_08\\_Gilbert.pdf](http://portale.unitn.it/bpmapp-upload/download/fstore/7f0000016c9f2f72_186c6b2_11e1bdac6d3_-765b/23_08_Gilbert.pdf).

<sup>42</sup> Ronald Trostle, USDA Economic Research Service, *Global Agricultural Supply and Demand: Factors Contributing to the Recent Increase in Food Commodity Prices* (July 2008, Revised).

<sup>43</sup> The Energy Policy Act of 2005 mandated the use of 7.5 billion gallons of renewable fuel by 2012. Sec. 1501, P.L. 109-58, 119 Stat. 594 (109th Cong., 1st Sess.). In the Energy Independence and Security Act of 2007, Congress increased the requirement for biofuels to 36 billion gallons by 2022, and specified that 21 billion gallons of this total must be derived from non-cornstarch products, such as sugar or cellulose. P.L. 110-140, 121 Stat. 1492 (2007).

<sup>44</sup> The adverse weather conditions in 2006 included droughts in Russia, Ukraine, Australia, and South Africa. In 2007: Northern Europe experienced a dry spring and harvest-time floods; southeast Europe, northwestern Africa, and Turkey experienced drought; the drought in Russia and Ukraine continued for a second year; it was unusually hot and dry during the growing season in Canada; late freezes significantly reduced the yield of U.S. hard red winter wheat crops and the corn and barley crops in Argentina; and Australia experienced a third year of its worst drought in a century. Trostle, at pp. 20-21.

<sup>45</sup> *Id.*

<sup>46</sup> A recent study by the Farm Foundation identified similar factors. "The real and much more complex answer involves economic growth, international trade, currency markets, oil prices, government policies, and bad weather." Farm Foundation, Issue Report, *What's Driving Food Prices?* (by Philip C. Abbott, Christopher Hurt, Wallace E. Tyler), July 2008, at p. 5. The Farm Foundation listed the following factors as underlying the price increases: growing food demand and dietary transition to more animal protein in developing countries resulting in global consumption increasing faster than production; lower level of investment in agricultural research

On the question of speculation, the USDA report noted the presence of increasing investments in agricultural commodity markets by hedge funds, commodity index funds, and others. The report observed that these speculative investments had constituted an increasing share of agricultural futures contracts and might have increased short-term price volatility, but stopped short of reaching any conclusion about the extent to which speculation contributed to the 2008 rise and fall in commodity prices. The USDA report stated:

“The funds held an increasingly large percentage of open interest in the futures market for agricultural commodities, as well as of nonagricultural commodities such as metals and energy. These investors only had a financial interest in the markets and did not intend to take delivery of the agricultural commodities. Indeed, it is likely that in general, neither the investors nor the financial managers that directed the funds’ investments knew much about the fundamentals of agricultural commodity markets. It is unclear to what extent the effect of these new investor interests had on prices and the underlying supply and demand relationships for agricultural products. However, computerized trend-following trading practices employed by many of these funds may have increased the short-term volatility of agricultural prices.”<sup>47</sup>

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leading to lower growth in productivity in commodity production; bad weather and crop disease issues in 2006-2007; increasing mandates and subsidies for biofuels; depreciation of the dollar relative to the Euro and other world currencies; increases in the price of crude oil; and other production cost increases. *Id.*, at p. 48-9.

<sup>47</sup> Trostle, at p. 20. Like the USDA, the Farm Foundation identified increased speculation as a possible cause, but declined to draw any conclusions: “There is no doubt that the amount of hedge fund and other new monies in the commodity markets has mushroomed. Price volatility has increased, partly due to increased trading volumes. Based on existing research, it is impossible to say whether price levels have been influenced by speculative activity.” *Id.*, at p. 20. Generally, there have always been substantial analytical challenges using the available market data in attempting to determine the effects of different levels of speculation on commodity prices. In its 2006 Report, *The Role of Market Speculation in Rising Oil and Gas Prices: A Need to Put the Cop Back on the Beat*, the Subcommittee found that the recent influx of billions of dollars into hedge funds, index funds, and other commodity investments had indeed contributed to rising energy prices, but also “gaps in available market data currently impede analysis of the specific amount of speculation, the commodity trades involved, the markets affected, and the extent of price impacts.” “It is likely that economists will continue to search for direct links between imbalances in hedging needs, speculative positions, and speculative returns. The intuitive appeal of the connection is almost inviolate although the empirical evidence is at best mixed.” Peck, *Futures Markets: Their Economic Role*, at p. 28. In 1941, G. Wright Hoffman, consulting economist to the USDA’s Commodity Exchange Authority (predecessor to the CFTC), wrote of the difficulty in measuring the effect of speculation on grain prices: “It is extremely difficult to measure with accuracy the relative importance of underlying trade facts as price determinants; because of this fact, it is equally difficult to measure precisely the importance of those forces which are generated largely within the market.” G. Wright Hoffman, U.S. Department of Agriculture, Technical Bulletin No. 747, *Grain Prices and the Futures Market: A 15-year Survey, 1923-1938* (January 1941), at p. 9.

In September 2008, in response to mounting concerns that speculators were pushing up commodity prices to levels that had no relationship to supply or demand for the commodities involved, the U.S. House of Representatives passed legislation to impose more stringent limits on speculation in the commodity markets.<sup>48</sup> Among other provisions, the bill directed the CFTC to establish position limits for all commodities traded on CFTC-regulated futures exchanges, and authorized the CFTC to impose such limits on over-the-counter commodity transactions. While the House-passed bill was not taken up in the Senate, 10 other bills were introduced by more than 30 Senators to stop excessive speculation in the commodity markets.<sup>49</sup>

## **2. Effects of Commodity Price Spikes on Farmers and Grain Elevators**

Much of the reason for Congressional attention to the commodity markets is the dramatic impact that commodity price increases have on the U.S. economy. The steep rise and sudden collapse in grain prices, for example, severely strained farmers and other participants in the grain industry. In particular, the increase in crude oil prices, which peaked at a record-high of \$147 per barrel in July 2008, pushed up the price of other refined products like gasoline and diesel fuel to record highs, and contributed to increased prices for natural gas and fertilizer. Record-high fuel and fertilizer prices significantly increased the costs of farmers growing grain, the farmers and grain merchants transporting grain crops to markets, the processors of these crops, and, ultimately, the consumers of those crops and the foods produced from them.

At some points during 2008, grain prices rose to record highs, but farmers and grain merchants often were unable to realize the benefits of those higher prices. In March 2009, for example, the USDA reported that although U.S. wheat prices had remained high by historical standards, high farming costs, particularly for energy and fertilizer, had “offset this unprecedented runup in wheat prices for producers.”<sup>50</sup>

<sup>48</sup> H.R. 6604 (September 22, 2008).

<sup>49</sup> S. 3122 (Cantwell, Snowe); S. 3130 (Durbin, Reid, Levin, Bingaman, Dorgan, Feinstein, Klobuchar, Menendez, Brown, Casey, Kerry, Leahy, Murray, Mikulski, Obama, Reed); S. 3131 (Feinstein, Stevens); S. 3134 (Nelson-FL); S. 3183 (Dorgan, Nelson-FL, Carper); S. 3185 (Cantwell, Whitehouse, Sanders, Kerry, Wyden, Nelson-FL); S. 3248 (Lieberman, Collins, Cantwell); S. 3255 (Levin, Feinstein); S. 3268 (Reid, Durbin, Dorgan, Murray, Schumer, Casey, Mikulski, Carper, Klobuchar, Brown, Cardin, Leahy, Menendez, Reid, Lautenberg, Wyden, Johnson, Dodd); and S. 3577 (Levin, Bingaman, Harkin).

<sup>50</sup> Mir Ali and Gary Vocke, *Consequences of Higher Input Costs and Wheat Prices for U.S. Wheat Producers*, USDA Economic Research Service, March 2009, at p. 2.

Moreover, in some instances prices fell sharply before the affected crops could be sold or hedges locked in. In other instances, rising prices led to higher margin calls and cash outlays for farmers, grain elevators, and grain merchants who had sold futures to hedge their cash crops.

The National Farmers Union described the financial impact upon many farmers:

“As speculators created a market bubble and attitude that higher prices were set to stay, crop, livestock and dairy producers locked in higher inputs and feed costs. The false signals were not reserved for agricultural producers, but extended beyond production agriculture to the ethanol and biodiesel industries and input suppliers, all locking in higher feedstocks and supplies. The 2008 economic collapse and bursting of [the] bubble have jeopardized the economic livelihoods of all these players, which will ripple throughout our rural communities. . . .

“As you can imagine, it was very frustrating for farmers who were paying record amounts for inputs, but could not implement effective marketing plans or strategies to take advantage of the higher prices for their crops.”<sup>51</sup>

The general increase in commodity prices also severely impaired the ability of many grain elevators to buy and sell grain. Elevators are a critical link in the marketing chain for wheat and other grains. A publication by the Federal Reserve Bank of Kansas City explains:

“Since their emergence in the mid-1800s, grain elevators have earned income by collecting, storing, and readying grain for transportation. Smaller, country grain elevators collect grain from farmers, hold it in storage, and coordinate transportation to final end users or larger terminal elevators, which coordinate larger shipments to other domestic or international users. The grain held in storage is either owned by the elevator or by the farmers, who pay storage fees.”<sup>52</sup>

<sup>51</sup> Testimony of Tom Buis, National Farmers Union, before the U.S. House of Representatives Agriculture Committee, February 3, 2009.

<sup>52</sup> Jason Henderson and Nancy Fitzgerald, *Can Grain Elevators Survive Record Crop Prices?*, The Main Street Economist, Federal Reserve Bank of Kansas City, Vol. iii, Issue III (2008). “According to the 2002 Economic Census, grain elevators operated in almost 6,000 locations and employed over 61,000 workers. Grain elevators generated almost \$90 billion in sales and revenue.” *Id.*

Grain elevators usually purchase grain from farmers with cash purchases or forward contracts which set a specified date in the future for the delivery of the commodity.

“In a forward contract, an elevator agrees to purchase a quantity of grain from a farmer at a specified quality or grade to be delivered on a future date at an agreed-on price. Forward contracts are typically consummated pre-harvest, allowing farmers to guarantee a crop price and eliminate the risk of falling crop prices as harvest approaches.”<sup>53</sup>

Many grain elevators, particularly co-operatives owned by farmers, also sell seed, fertilizer and other items that farmers need.

In order to protect themselves from the risk of falling crop prices, elevators usually hedge their cash or forward purchases by entering into futures contracts on the futures exchanges to sell the grain at a price they expect will cover their expenses. Grain elevators that possess grain in storage are said to be “long” in the cash market; when they enter into futures contracts to sell that grain in a future month, they are said to be “short” in the futures market. Once the purchase of a cash crop is hedged with a futures contract, any decline in the value of the crop in the cash market should be offset with a gain in the futures market.<sup>54</sup>

Even if an elevator is completely hedged – so that the elevator will have “locked in” a gain regardless of the direction of the market – a steeply rising market can impose significant additional costs upon the elevator operator. In a rising market, grain elevators and merchants that have hedged by selling futures may be subject to margin calls from the exchanges to cover the loss in value of their “short” positions. These margin calls, which are made at the end of each trading day, require payments by the grain elevator or other party to the futures exchanges into a margin account. The amounts in the margin account are not recovered by the elevator until the short position is closed out – in this case, until the elevator sells its grain and terminates the hedge. If a grain elevator cannot make the requisite margin payments, the exchange will close out its position at the current market price, possibly causing further losses.

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<sup>53</sup> *Id.*

<sup>54</sup> At the same time, any gain in the cash market due to an appreciation in the price of the commodity in the cash market should be offset by a loss in the futures market. That is why a hedging strategy prevents gains as well as losses due to changes in the value of the commodity and should leave the hedged party indifferent to price changes. Hedging is more fully described in Section III of this Report.

In 2008, rising grain prices in the cash markets, together with rising margin calls, required many grain elevators to make much larger cash outlays than normal. The National Grain and Feed Association estimated that a typical grain elevator faced a 300% increase in hedging costs in 2008, compared to 2006.<sup>55</sup> It stated that “recent commodity price increases have led to unprecedented borrowing by elevators – and unprecedented lending by their bankers – to finance inventory and maintain hedge margins.”<sup>56</sup>

According to the Federal Reserve Bank of Kansas City, in the first quarter of 2008, the Farm Credit System “raised \$10 billion in funds through the sale of debt securities to meet increasing demand from elevators and other processing and marketing entities.”<sup>57</sup> In April 2008, the Federal Reserve Bank of Kansas City reported that nearly one-quarter of all grain elevators it surveyed were struggling to acquire the cash needed to manage margin calls; about 40 percent stated they had “enough cash to just manage current margin calls.”<sup>58</sup>

Another factor compounding the financial difficulties of farmers, grain elevators, grain merchants, and producers during much of 2008 was the large difference between the price of wheat on the futures market and the price of wheat in the cash market. For much of the year, futures prices for wheat were significantly higher than prices in the cash market – up to \$2 per bushel more. During the seven-month period from May through December when the price of wheat in the cash market ranged from \$3.12 to \$7.31 per bushel, the price of wheat ranged from \$4.57 to \$9.24 in the futures market.<sup>59</sup> Hence, when farmers and elevators actually sold their wheat in the cash market, they actually received up to \$2 per bushel less than they had initially expected based

<sup>55</sup> National Grain and Feed Association, *Effects of a Changed Marketplace on Elevators, Producers* (document provided to the Subcommittee).

<sup>56</sup> *Id.*

<sup>57</sup> *Can Grain Elevators Survive Record Crop Prices?*, at p. 4.

<sup>58</sup> Esther George, Senior Vice President, Supervision and Risk Management, Federal Reserve Bank of Kansas City, *Remarks for CFTC Public Meeting on April 22, 2008*. One bank reported to the Federal Reserve that the line of credit to one elevator had risen from \$7 million to \$57 million and required the participation of three banks. *Can Grain Elevators Survive Record Crop Prices?*, at p. 3.

<sup>59</sup> Cash market prices are based upon the MGEX index price.

upon the prices in the futures market.<sup>60</sup> As explained in the following sections of this Report, the persistence of this large price difference between the futures price and the cash price has seriously impaired the basic function and purpose of the futures markets, which is to provide a means for commodity producers, marketers, and consumers to manage their price risks.

In January 2008, the National Grain and Feed Association reported on the dire consequences throughout the grain marketing system from the failure of the futures markets to provide reliable hedging of future crop prices:

“As banks have begun to question hedging performance in futures positions, borrowing lines have been stretched to the limit or beyond. Banks are beginning to restrict financing to some companies. Elevators and other grain buyers have been forced by market conditions to liquidate inventories. Cash basis levels [the difference between the futures and cash prices] are widening in reflection of much higher financing costs that now are being forced into the system – if, indeed, financing remains available at all. In some cases companies have eliminated deferred cash bids altogether.”<sup>61</sup>

The National Grain and Feed Association attributed the large differences between the futures prices and the cash prices for grain, in part, to the influx of futures purchases being made by commodity index investors and other speculators. “We also believe that the poor market performance we are experiencing is influenced by new investors targeting agriculture with the aid of the hedge exemption.”<sup>62</sup> Similarly, the American Bakers Association informed the CFTC of its concern that, as a result of increasing commodity index trading, “the commodity exchanges have moved away from their original intent – to allow producers to sell their product in a transparent, regulated manner to physical users of the commodity.”<sup>63</sup> One grain market analyst likened commodity index trading to a “900-pound gorilla” in the commodity

<sup>60</sup> As explained in the Section III, this loss to the farmers and elevators was due to the large difference between the futures and cash prices (basis) together with the lack of convergence between the cash and futures prices as the futures contracts expired.

<sup>61</sup> Letter from Rod Clark, Chair, Risk Management Committee, to David Stawick, Secretary, Commodity Futures Trading Commission, January 21, 2008.

<sup>62</sup> *Id.*

<sup>63</sup> Letter from American Bakers Association to The Honorable Walt Lukken, Chair, Commodity Futures Trading Commission, May 7, 2008.



futures markets: “A 900-pound gorilla doesn’t intend to level things in its path, but that may be the result simply due to its sheer size.”<sup>64</sup>

The cash flow problems of many grain elevators directly affected many farmers. As grain elevators struggled to find cash to meet margin calls, they began to reduce their cash purchases, pull back on the forward contracts offered to farmers, and lower the prices offered to farmers for their crops. The National Association of Wheat Growers reported in April 2008:

“The result of financial pressure on country elevators can be withdrawal of bids (no local market for cash grain), withdrawal of forward pricing opportunities (because the elevators can’t hedge those forward prices) and wider basis levels. Basis levels have increased by more than 50 cents in recent weeks because of the increased cost and risk being borne by grain merchants as well as a perception that the futures price was in some cases overinflated.”<sup>65</sup>

The Federal Reserve Bank reported that as a result of increased margin calls and constrained credit lines, “some grain elevators have limited (and in some cases eliminated) their offerings of forward, basis and other contracts to limit further strains on cash flows.”<sup>66</sup> The Federal Reserve Bank also reported that some elevators had begun to require farmers to pre-pay for seed and fertilizer.<sup>67</sup>

Farmers who used the futures markets themselves to hedge the sales of their crops were subject to the same financial stresses as the elevators.<sup>68</sup> “If you’ve got 50,000 bushels hedged and the market moves

<sup>64</sup> Diana Klemme, *When Gorillas Migrate*, feedandgrain.com, July 8, 2008, at <http://www.feedandgrain.com>.

<sup>65</sup> National Association of Wheat Growers, NAWG Comments on Futures Markets, Prepared for Commodity Markets Council forum, April 3, 2008 and CFTC forum, April 22, 2008.

<sup>66</sup> *Id.*

<sup>67</sup> *Can Grain Elevators Survive Record Crop Prices?*, at p. 3.

<sup>68</sup> Several recent estimates indicate that a relatively small percentage of farmers directly use the futures markets for hedging. Instead, most farmers rely upon grain elevators and other grain buyers to obtain forward contracts for their crops. The National Corn Growers Association recently stated: “By one estimate, probably less than 10% of farmers are directly using the futures market for risk management.” Statement of Garry Niemeyer, National Corn Growers Association, Agricultural Markets Roundtable, Commodity Futures Trading Commission, April 22, 2008. Another article reported: “in a sample of Kansas producers ... only 11% hedged any of their grain using futures. [Several studies] consistently showed that more producers used forward contracts than used futures hedges. These studies showed that 42-74% of producers used forward contracts to price any of their grain.” Darrell R. Mark, B. Wade Brorsen, Kim B. Anderson and Rebecca M. Small, *Price Risk Management Alternatives for Farmers in the Absence of Forward Contracts with Grain Merchants*, Choices, 2nd Quarter 2008. Grain industry participants interviewed by the Subcommittee generally concurred with these statistics.

up 20 cents, that would be a \$10,000 day,” one farmer observed. “If you only had \$10,000 in your margin account, you’d have to sit down and write a check. You can see \$10,000 disappear overnight. . . . Everybody has a story about a guy they know getting blown out of his hedge.”<sup>69</sup> “This is something the farmer didn’t have to worry about before,” a broker noted. “It’s a cruel and unforgiving system.”<sup>70</sup>

The following sections of this Report examine the interaction of the cash and futures markets that contributed to this financial turmoil, the role of speculation through commodity index trading that has helped disrupt the functioning of these markets, and how regulatory actions to date have contributed to these market problems.

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The Mark-Brorsen article, written in mid-2008, also stated: “At the same time when farmers have a greater demand for cash forward contracts, grain merchants and elevator operators now have limited capacity to offer these contracts. The extra costs associated with margin accounts and extra working capital have been reflected in lower forward basis bids for corn, soybeans, and wheat in many Midwest and Corn Belt states.” *Id.*

<sup>69</sup> Diana B. Henriques, *Price Volatility Adds to Worry on U.S. Farms*, The New York Times, April 22, 2008.

<sup>70</sup> *Id.*

*"During the seven years of plenty the land brought forth abundantly. . . . Thus Joseph stored up grain in great abundance like the sand of the sea, until he stopped measuring it, for it was beyond measure."*

--Genesis 41: 47-9

### **III. HEDGING AND SPECULATION IN THE FUTURES MARKETS**

Wheat farmers, grain merchants, millers, commercial wheat users, speculators, and others use a variety of trading strategies in both the cash and futures markets for wheat to deal with changing prices in these markets. To understand some of these basic strategies and the breakdown in the relationship between these two markets over the past several years, this section provides additional information about the purposes of commodity futures markets, the meaning of certain market terms, and the role of CFTC position limits and exemptions. It discusses in particular the risk management and price discovery functions of the commodity markets, the concepts of hedging versus speculation, the importance of price convergence between the cash and futures markets, and key terms such as basis, price spreads, and carry. This section also discusses the development and application of CFTC position limits on agricultural commodity trades and the hedging exemption that allows some market participants to exceed those limits.

#### **A. Purposes of the Futures Market**

U.S. commodity futures markets developed in the mid-nineteenth century to meet the commercial needs of expanding U.S. grain markets. As local grain markets supplied wheat and other grains across the nation and then around the world through improved transportation and technology, grain merchants relied increasingly on forward contracts to manage price risks and sell grain across ever-increasing distances and periods of time.

Forward contracts, like spot or cash transactions, typically call for delivery of a specified quantity and quality of a commodity at a particular time and place, and at an agreed-upon price. Forward contracts can call for any amount or type of grain to be delivered at any time or location. Particularized forward contracts are, however, relatively illiquid, meaning they cannot be easily traded to other parties who may not want delivery at the specified amount, time, and place.

Futures contracts developed as essentially standardized forward contracts. A noted expert on commodity markets, Professor Anne Peck, explained: “Futures contracts are standardized forward contracts, and futures markets are organized trading of those contracts.”<sup>71</sup> Futures contracts offer a standard quantity and quality of a commodity for delivery at a standard time and location. The only variable to be negotiated in a standardized futures contract is price. Standardized futures contracts are therefore of broader utility than forward contracts, and the market for these contracts is more liquid, meaning that it is easier to find a counterparty with which to trade.

The ultimate purpose of commodity markets is to help buyers and sellers price their goods efficiently and manage risks associated with price changes. Professor Hieronymus put it this way:

“The basic impetus for futures markets related to inventory risks, and financing and pricing problems. As commerce developed and required the accumulation of inventories, particularly of seasonally produced crops, merchants and processors found themselves with problems that were best managed by forward contracting. This forward contracting developed into standardized procedures that were eventually codified and formalized into futures trading.”<sup>72</sup>

One key problem in the commodity futures markets is that typically there are an insufficient number of purchasers of a commodity who have the need and ability to trade futures contracts to match the number of sellers of futures contracts in the futures market. The ultimate purchasers of a commodity are often smaller in size, need smaller quantities of the commodity, and have less capital than the producers of the commodity. Smaller end-users often do not have a sufficient need or the resources to participate in the futures markets. For example, while oil companies that refine gasoline trade on the futures markets to hedge their sales of gasoline, it would be prohibitively expensive for the average driver to use the futures market to hedge his or her weekly purchases at the pump.<sup>73</sup>

<sup>71</sup> Peck, *The Economic Role of Traditional Commodity Futures Markets*, at p. 11.

<sup>72</sup> Hieronymus, at p. 93.

<sup>73</sup> The standard futures contract for gasoline calls for delivery of 42,000 gallons of gasoline. For a car that gets 24 miles per gallon, this would be a sufficient amount of gasoline to drive about 1 million miles. Presently, the margin deposit required for a typical consumer to purchase a single futures contract would be about \$9,400.

To make up for the shortage of purchasers, commodity markets rely on other types of participants in the market – namely, speculators – to provide a sufficient number of counterparties to the physical producers, processors, and merchants in the market. The typical definition of a speculator is a market participant who does not produce, use or consume the commodity in its ordinary course of business, but rather enters the futures market solely to profit from changes in commodity prices.<sup>74</sup>

Although buying and selling futures contracts by speculators is often essential to provide sufficient liquidity to a futures market, the participation of these speculators does not change the fundamental nature or purpose of these markets, which is to enable the producers, merchants, and users of the commodity to price the commodity efficiently and manage their price risks over time. The ability and willingness of the physical producers, merchants, and end-users of a commodity to use the futures market to establish prices and manage their price risks is a prerequisite for the participation of speculators.

The history of the commodity futures markets demonstrates that futures markets cannot exist if they do not accomplish their intended purpose of enabling the producers, merchants, and end-users of a commodity to establish prices and effectively manage their price risks. Holbrook Working, one of the pioneers in the field of the economics of the futures markets, observed: “A futures market [can] succeed only to the degree that it [can] attract business from handlers of the commodity.”<sup>75</sup> There are many examples of markets that lost liquidity and went out of existence because the producers and end-users of the commodity lost confidence in the ability of the market to help them price their goods and manage risk.<sup>76</sup> In a 1980 study, commodities

<sup>74</sup> The CFTC defines the term “speculator” as “one who does not produce or use a commodity, but risks his or her own capital trading futures in that commodity in hopes of making a profit on price changes.” CFTC, *The Economic Purpose of Futures Markets and How They Work* (CFTC website).

<sup>75</sup> Holbrook Working, *Economic Functions of Futures Markets*, reprinted in *Selected Writings of Holbrook Working* (Chicago Board of Trade, 1985), at p. 274.

<sup>76</sup> The demise of the futures market for Maine potatoes is the classic example of this proposition. Another example is the futures market for onions, which Congress prohibited by legislation in 1958, at the request of the onion growers. Following an outcry from onion farmers that the “the gyrations of the futures market” were unreasonably affecting the cash price for onions, the Congress first attempted to subject the onion futures market to regulation under the Commodity Exchange Act. *Prohibiting Futures Trading in Onions*, H. Rept. 1036, 85th Cong., 1st Sess. (1957). When that failed to stop the price fluctuations, Congress completely prohibited onion futures. The Senate report on the bill to prohibit the trading of onion futures declared: “It now appears that speculative activity in the futures markets causes such severe and unwarranted

expert Professor Peck summarized the contemporary importance of the futures markets to setting prices in the cash markets for agricultural commodities:

“Futures markets in agricultural and metals products have become the primary markets determining underlying values, and all other transactions, spot and forward, are priced in relation to these prices with due allowance for time, place, and quality differences. Both spot and forward market transactions remain important since they are the primary means by which commodity ownership is actually transferred. These transactions are not made independently of market prices, however, and futures positions are often necessary components of the total transactions.”<sup>77</sup>

Professor Peck also described managing price risk as the central function of the futures markets:

“Futures markets are hedging markets. Their use reflects the commercial needs of firms simultaneously operating in the cash markets. Speculation is required on futures markets as a response to commercial needs and can be best understood as offsetting both the long and the short hedging positions of commercials, not their net positions. Measures of minimum speculative needs on a market ought to reflect total hedging requirements of the commercial users of that market.”<sup>78</sup>

In drafting the Commodity Exchange Act, Congress established a regulatory framework which reflects the principle that the primary purposes of a commodities futures market are to enable market

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fluctuations in the price of cash onions as to require complete prohibition of onion futures trading in order to assure the orderly flow of onions in interstate commerce.” *Prohibiting Futures Trading in Onions*, S. Rept. 1631, 85th Cong., 2nd Sess. (1958). The futures markets for cured pork, durum wheat, and eggs are additional examples. See Holbrook Working, *Speculation on Hedging Markets*, Food Research Institute Studies, Stanford University, Vol I., No. 2 (May, 1960) (available in [farmdoc](#) archives); Holbrook Working, *Economic Functions of Futures Markets*, reprinted in Selected Writings of Holbrook Working (Chicago Board of Trade, 1985), at pp. 267-9; Diane S. Miracle, *The Egg Futures Market: 1940 to 1966*, Food Research Institute Studies, Stanford University (1972) (available in [farmdoc](#) archives).

<sup>77</sup> Peck, *The Economic Role of Traditional Futures Markets*, at p. 13.

<sup>78</sup> Peck, *The Influence of Hedging on Futures Markets Activity: Some Further Evidence*, Stanford University (1980), at p. 19 (available in [farmdoc](#) archives). In arriving at this conclusion, Peck referenced similar findings of previous research done by Hoffman, Working, Sandor, and others, and examined more recent data (from 1972-77) from the wheat, corn, soybean, potato, live cattle, pork belly, T-bill, and GNMA markets. Working comments: “One can imagine existence of futures trading purely on the basis of desire of people to speculate; but apparently futures trading cannot long persist except on the basis of conditions that create speculative risks which somebody must carry, and which some people are led to transfer to others by hedging.” Holbrook Working, *Futures Trading and Hedging*, reprinted in Selected Writings of Holbrook Working (Chicago Board of Trade, 1985), at p. 140.

participants to manage and assume price risks and to discover and establish prices for commodities traded on the market. Section 3 of the Commodity Exchange Act states:

“The transactions subject to this Act are entered into regularly in interstate and international commerce and are affected with a national public interest by providing a means for managing and assuming price risks, discovering prices, or disseminating pricing information through trading in liquid, fair and financially secure trading facilities.”<sup>79</sup>

## **B. Use of Hedging to Manage Risks**

### **1. Hedging versus Speculation**

“Hedging” is the term used to describe the activity of someone who is using the futures market to manage the price risks associated with the sale, purchase, or use of a commodity. Hedging has sometimes been described as an activity undertaken by the producer, merchant, or end-user of a commodity as opposed to a speculator who does not produce, use, or consume the commodity. Since there are numerous strategies and approaches to managing price risks, however, it often is impossible to distinguish, from an economic perspective, whether a particular transaction is, in fact, hedging or speculation.<sup>80</sup> The line between minimizing risks – which is what the term “hedge” connotes – and

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<sup>79</sup> 7 U.S.C. §5 (2006).

<sup>80</sup> In a recent report, the CFTC stated that the term “speculator” means “a trader who does not hedge, but who trades with the objective of achieving profits through the successful anticipation of outright price movements or through relative price movements in the case of spread trades.” CFTC, *Staff Report on Commodity Swap Dealers & Index Traders with Commission Recommendations*, September 2008, at p. 68. A distinction between hedging and speculating based on trader motive or intent is problematic, however, for several reasons. First, producers, merchants, and end-users of a commodity often use the futures market in a manner similar to many speculators “in hopes of making a profit on price changes.” Hedgers often trade with the “objective of achieving profits through the successful anticipation of . . . relative price movements.” Second, it often is impossible to discern a trader’s intent or motive, which in any event does not alter the economic consequences of the trader’s actions.

Another view is that hedging and speculative transactions are inherently similar: “It is sometimes said that hedging is the opposite of speculation. This is not so. They are different kinds of the same thing. The thing that is usually identified as speculation – that is, long or short positions in futures contracts – is speculation in price level. The thing that we identify as hedging – that is, long cash and short futures or vice versa – is speculation in price relationships. . . . Thus hedging and speculation are not opposite; in fact, they are conceptually similar. They are just different kinds of speculation.” Hieronymus, at p. 151.

maximizing profits – which is what the term “speculation” connotes – can be exceedingly difficult to draw.<sup>81</sup>

Although a precise definition of hedging is elusive, one accepted definition is “the purchase or sale of a futures contract by a handler of commodities.”<sup>82</sup> Another widely recognized definition of hedging is “the use of futures contracts as a temporary substitute for a merchandising contract that is to be made later.”<sup>83</sup> Both definitions

<sup>81</sup> Whether or not to initiate a hedge may in fact involve speculation about the future course of the market, and may not, in fact, reduce costs. For example, as oil prices rose over \$100 per barrel during the first half of 2008, oil-consuming businesses were faced with the decision of whether to hedge their future fuel purchases and lock-in record-high prices, or not to hedge, thereby facing the risk that oil prices and fuel costs would continue to rise. In light of the subsequent fall in prices in the latter half of the year, a firm that hedged its future fuel purchase with oil futures that were over \$100 per barrel would have fared much worse than a firm that chose not to hedge and was therefore able to purchase their fuel at much lower costs as oil prices fell.

Furthermore, speculation by hedgers regarding anticipated price levels can have the same effect on market prices as outright speculation by speculators. For example, a large increase in the amount of hedging undertaken by commercial firms to “lock in” the purchase price of a commodity in the belief that prices will increase will have the same effect upon absolute price levels as the purchases of the same number of futures contracts by speculators holding that same belief.

One former trader has described how he and other traders exploited the ambiguity between hedging and speculation to disguise the amount of speculative trading they had undertaken:

“The trading desks took more risk: instead of hedging, they took open positions, hoping to profit from movements in market prices. This risk taking was well disguised initially. We all found the concept of a ‘hedge’ conveniently ambiguous. Traders would put on a ‘heavy’ hedge (we were overhedged) or a ‘light’ hedge (we were underhedged). As time went on, management and controls caught up. In a belated acknowledgment of the verities of the derivatives business, they put trading limits in place, recognizing that we actually needed to speculate to make budgets. ‘Revenue is enhanced by judicious positioning on the back of natural trading flows,’ is how I put it in a more eloquent moment.”

Satyajit Das, *Trader Guns & Money* (FT Prentice Hall, 2006), at p. 42.

<sup>82</sup> Jeffrey Williams, *The Economic Function of Futures Markets* (Cambridge University Press, 1986), at p. 18. Williams also writes: “Hedging operations, which comprise one transaction in a futures market and a simultaneous transaction in the cash market, are central to futures markets. From the very word itself, it can be seen that hedging is commonly associated with risk aversion. That association, however, results from confusion on the part of observers who have failed to understand the nature of hedging as one of two simultaneous transactions. . . . It is by no means obvious that risk aversion motivates dealers’ hedging operations.” *Id.*, at p. 19.

<sup>83</sup> Working, *Whose Markets? Evidence on Some Aspects of Futures Trading*, at p. 252. In another article, Working states: “[T]he general concept of hedging as taking offsetting risks wholly, or even primarily, for the sake of reducing net risks, serves so badly as applied to most hedging on futures markets that we need another concept for that most common sort of hedging. To put it briefly, we may say that hedging in commodity futures involves the *purchase or sale of futures in conjunction with another commitment, usually in the expectation of a favorable change in the relation between spot and futures prices.*” Working, *Futures Trading and Hedging*, at p. 149 (emphasis in original). Peck comments that, “Working’s summary definition is perhaps as all-encompassing as is possible.” Peck, *The Economic Role of Traditional Futures Markets*, at p. 13. Hieronymus defines hedging more narrowly, but is still consistent with Working’s formulation: “To hedge is to take a position in futures equal and opposite to an existing cash position . . . [and] to insulate one’s business activities from price level speculation while



encompass a variety of risk-management strategies. If the futures market is functioning properly, these hedging strategies can help manage price risks and improve the commercial profitability of the market participants employing them. If the futures market is not functioning properly, then these strategies will be ineffective, commodity producers, merchants, and end users will face increased financial risks, and the futures market will not be able to fulfill one of its primary purposes.

## 2. Example of Hedging: The Grain Elevator

To understand how the futures markets help manage risk and why lack of convergence between the futures and cash markets on prices is important, consider a straightforward example of hedging by a grain elevator.<sup>84</sup>

When a grain elevator purchases a crop from a farmer and stores it, that elevator is said to be “long” in that crop in the cash market. Typically, grain elevators are filled shortly after a crop is harvested; the crops in the elevators are then sold throughout the year. Once grain is purchased and loaded into storage in the elevator, the value of the stored grain is fully exposed to the changes in the value of that crop in the cash market. As the price of the crop in the cash market increases, the value of the crop in storage increases, and as the price in the cash market decreases, the value of the crop in storage decreases. In a declining market the elevator could face significant losses.

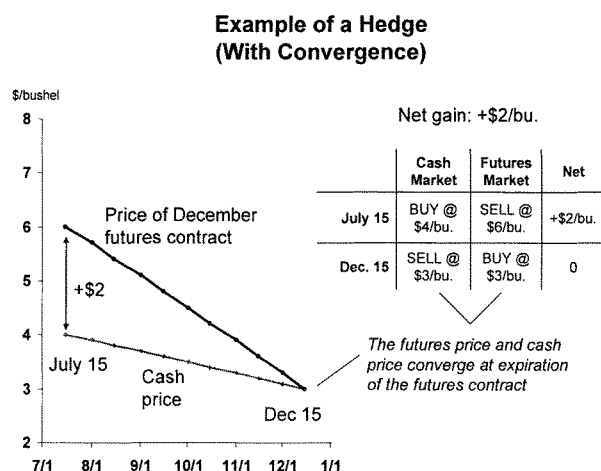
To protect itself against a potential loss in value of a cash crop in storage prior to the date the crop will actually be sold, the elevator can sell a contract for the future delivery of that commodity on a futures exchange. In determining which futures contract to use, the elevator would typically select the futures contract that calls for delivery of the commodity in the month that is closest to the date on which the elevator anticipates making the actual sale of the stored grain. Rather than waiting for the actual date of sale in the cash market to determine the sales price, by selling a futures contract the elevator would immediately know how much it would receive for the sale of the grain – namely the

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retaining the opportunity to speculate in basis variation. This definition takes hedging out of the context of risk shifting and puts it in the business context of trying to make a profit.” Hieronymus, at p. 150.

<sup>84</sup> Other participants that buy and sell unprocessed or processed grain, such as farmers, grain processors, merchants, and commercial end-users often employ similar strategies to manage their price risks. For the sake of simplicity, the example refers solely to a grain elevator and not to other participants in the grain trade.

price of the futures contract it had just sold. By selling a futures contract to deliver the commodity, at a price determined today for delivery at a specified time in the future, the elevator can use the futures market to protect the value of its stored grain. The elevator is then said to be “hedged,” because it has both a long position in the cash market and an equal and opposite “short” position in the futures market.



**Figure 17a.** In this example, the futures price and the cash price have converged to exactly the same price.

For example, consider the case of a grain elevator that purchases a crop from a farmer on July 15 for \$4 per bushel, as illustrated in Figure 17a. The grain elevator wants to ensure that the value of its crop in storage will not fall before it sells the wheat in December. The elevator looks up the price of wheat futures on the Chicago exchange and sees there are futures contracts for March, May, July, September, and December. The price of the December futures contract is currently \$6 per bushel. The grain elevator figures that if it can sell the crop for \$6 per bushel in December, then it will be able to realize a decent profit after subtracting the purchase price of the grain and the costs of storing the grain from July to December. The elevator operator calls a commodities broker (technically, a “futures commission merchant”) and puts in an order to sell December futures at \$6 per bushel. As of July

15, therefore, the elevator has bought grain in the cash market for \$4 per bushel, and sold it in the futures market for \$6 per bushel, for a net gain of \$2 per bushel.

The grain elevator is now hedged, having both a long position in the cash market and a short position in the futures market. Any gain or loss in the elevator's long position in the cash market from increasing or decreasing prices between July and December should be offset by a loss or gain in the elevator's short position in the futures market over that same time period. Thus, the elevator can expect a net gain of \$2 per bushel from its hedging strategy.

Hedging requires two sets of transactions. The first set of transactions is when the commodity is bought and a futures contract is sold. After the first transaction, the elevator's books will reflect that it has acquired grain for \$4 and that it has sold a futures contract for \$6, for a net gain of \$2 per bushel.<sup>85</sup> The second set of transactions is just the opposite of the first set of transactions: the commodity is sold and a futures contract is bought. After these two sets of opposite transactions, the grain elevator will have bought and sold both the grain and the futures contracts used to hedge that grain. The success of the hedging strategy can be determined only after both sets of transactions are completed – the grain has been bought and sold and the elevator no longer has any outstanding futures contracts.

The futures contract that the elevator sold in July requires grain to be delivered to an approved warehouse in December. The elevator, however, would prefer to sell its grain to a local elevator rather than incur the expense of shipping the grain to an approved warehouse. The purpose of its obtaining the futures contract was not to make an actual grain delivery in Chicago or Toledo in December, but to help the elevator manage its price risk. Accordingly, in December, the grain elevator will act to "unwind" the hedge it initiated in July.

To unwind its hedge, the elevator needs to buy a futures contract obligating it to take delivery of the same amount of wheat in December that its earlier futures contract obligated it to deliver in December. The December obligation to take delivery of the wheat would then cancel out its earlier obligation to make delivery of the wheat; since the two

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<sup>85</sup> Although the grain elevator will have to make an immediate outlay of \$4 in the cash market to obtain the grain, it will not receive anything from the sale of its futures contract until it closes out this contract on the futures exchange in December. In the interim, the net gain or loss from the sale of outstanding futures contract, using a daily mark-to-market accounting, remains within the margin account of the elevator on the exchange.

obligations would cancel each other out, the elevator would no longer have any obligations in the futures market.

In the example depicted in Figure 17a, the price of a futures contract for December delivery is \$3 per bushel. To unwind the hedge, therefore, the elevator would buy a futures contract for \$3 per bushel. Its delivery obligations to make and take delivery would cancel out, and the elevator would be left with a \$3 gain in the futures market – in July it had sold a December futures contract for \$6 and in December it purchased a December futures contract for \$3.

At the same time, the elevator would sell the grain in the local cash market for \$3 per bushel. Overall, in the cash market the elevator would have lost \$1 per bushel – it had bought the grain for \$4 in July and then sold it for \$3 in December. Since it gained \$3 in the futures market, however, the grain elevator's hedge resulted in a total gain of \$2 per bushel – the same net gain that it sought to obtain when it initiated the hedge in July.

As this example shows, the convergence of the wheat futures and cash prices in December is critical to the success of the elevator's hedging strategy.<sup>86</sup> Because the cash and futures prices were equal at contract expiration in December, it cost the elevator the same amount to "buy back" the futures contract as it received from selling its grain in the cash market. That meant the two transactions in December to unwind the hedge – the \$3 per bushel transaction in the futures market and the \$3 per bushel transaction in the cash market – resulted in no additional gain or loss, leaving the elevator with the same \$2 per bushel gain on its wheat that it had sought to obtain in July when it initiated the hedge. In this manner, the elevator's hedging strategy produced a net gain exactly equal to the amount that the elevator planned for when it initiated the hedge back in July.<sup>87</sup>

<sup>86</sup> In an actual futures market that is functioning properly, due to transaction costs the cash price usually varies from the futures price by a few cents at contract expiration, which would add to or reduce the return to the hedger by that amount. Additionally, the costs of storing and insuring the grain between the time the crop is purchased in the cash market and it is sold in the cash market would reduce the elevator's total return, as would the foregone interest on the cash used to purchase the crop. To the extent that the cash sale occurred in a different location from the contract delivery point, the difference in the cash price between the point of sale and the delivery point would also either reduce or enhance the net return.

<sup>87</sup> In commercial reality, the dates on which grain elevators actually sell or deliver grain in the cash market rarely match up exactly with the expiration dates of futures contracts. Typically, an elevator sells grain on many dates to merchants or processors who have a continuing need for delivery of grain. These merchants or processors will not want the grain to be delivered at the standard time and place specified in a standardized futures contract, such as a December delivery

By simultaneously taking equal and opposite positions in the cash and futures markets, the grain elevator's aim is to protect itself against fluctuations in the absolute price of wheat in the cash market. Instead of being exposed to the risk of price changes in the cash market, the grain elevator would then be subject only to the relative changes between the price in the cash market and the price in the futures market.<sup>88</sup>

### 3. Importance of Convergence for Hedging

The hedging strategy just described is effective only when the futures price and the cash price converge to approximately the same amount as the futures contract approaches expiration. If the futures price and the cash price are not approximately equal at the time the elevator sells the cash commodity and buys back its futures contract, the elevator's hedging strategy will not be fully effective, and the elevator would still be exposed to some risk. For example, if the futures price is higher than the cash price, the elevator will lose money in the second set of transactions, since it will pay more to buy back the futures contract than it will realize from selling the cash contract.

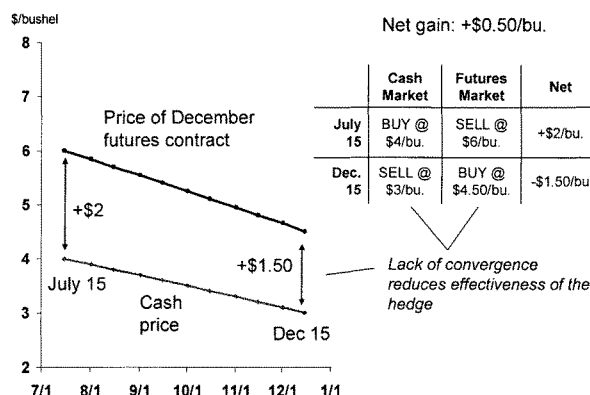
Figure 17b shows how the lack of price convergence at contract expiration reduces the effectiveness of hedging.

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of 5,000 bushels of soft red winter wheat to an approved warehouse in Chicago. The grain merchant will instead specify a delivery date and location dictated by its commercial needs, such as delivery of the wheat on a specific date to a specific mill. This commercial reality means that a grain elevator typically purchases multiple futures contracts to match its hedging needs, and that it will typically need to unwind one or more of its hedges at some time prior to the actual expiration of the relevant futures contracts.

<sup>88</sup> As explained below, this type exposure to price risk is termed "basis risk." This hedging strategy can be used even if the producer, merchant, or end user of a commodity has not yet acquired the commodity. A producer, merchant, or end user may, for example, initiate a hedge by selling a futures contract in the futures market prior to buying the commodity. In this instance, the sale of the futures contract is called an "anticipatory hedge." "[T]he anticipatory hedge serves as a temporary substitute for a merchandising contract that will be made later. In the one case it serves as a substitute for immediate purchase of the raw material on a merchandising contract; in the other case it serves as a substitute for a forward sale of the specific goods that are in course of production." Working, *New Concepts Concerning Futures Markets and Prices*, at p. 252. See also Peck, *The Economic Role of Traditional Futures Markets*, at pp. 19-21.

### Example of a Hedge (Without Convergence)



**Figure 17b.** In this example, there is a lack of convergence at contract expiration. A lack of convergence reduces the effectiveness of the hedge.

Figure 17b differs from Figure 17a in that the price of the December futures contract does not converge to the price of the commodity in the cash market. Instead, the futures price remains above the cash price. When the December contract expires, the final futures settlement price is \$4.50, rather than the \$3 in the cash market. As in Figure 17a, when the hedge was initiated in Figure 17b, the grain elevator anticipated receiving a \$2 per bushel gain. However, unlike in Figure 17a, where the cash price and the futures price converged at contract expiration, in Figure 17b it costs the elevator \$4.50 to buy back the futures contract it had sold, while at the same time receiving \$3 in the cash market for the grain it is selling. The result is that, in the second example, the elevator loses \$1.50 per bushel on the second pair of transactions in the cash and futures market to “unwind” the hedge. Subtracting the \$1.50 loss from the \$2 initial gain results in a net gain of only 50 cents for the grain elevator.

In this example, although the futures price and the cash price both fell over the life of the hedge, the hedge failed fully to protect the grain elevator from price risk, failing to do so precisely by the amount of the lack of price convergence. In the real world, the expenses of storage (about 5 cents per bushel per month) and insurance for the grain would

have further reduced the elevator's profits. In this example, the lack of convergence would likely have taken away much of the elevator's expected profit.

The ability to successfully hedge against price risk, therefore, depends upon the convergence of the cash price and the futures price as a contract approaches expiration. If these two markets converge, then farmers, elevators, and other hedgers can reliably anticipate their net gains (or losses) at the time they initiate a hedge. But if the two markets do not converge in a predictable manner, then hedgers are unable to anticipate their net gains or losses from the hedging strategy and lose the ability to protect themselves from price fluctuations.

In theory, the futures price and cash price should always converge at contract expiration, absent minor variations due to different timing and transaction costs in the two markets. In his classic textbook on commodities, Professor Hieronymus offers an explanation of why cash and futures markets should converge:

“The price of the cash commodity and its futures price must be equal in the delivery month. If the futures price were above the cash price, the cash commodity would be bought, the futures sold, and delivery made. If the cash price were above the futures price, users would buy futures and stand for delivery as the cheapest source of supply. Thus, arbitrage in cash and futures markets forces the two prices to be equal.”<sup>89</sup>

The need to provide a simple mechanism to force the cash and futures prices together near the expiration of a futures contract means that workable delivery mechanisms are critical to a well-functioning futures market. While actual deliveries may be rare under a futures contract, delivery must be feasible and easily executed if necessary to force convergence between the cash and futures prices – “to keep the market honest.”<sup>90</sup> A futures contract “must be so readily deliverable and so easily takable that neither party has reluctance to make or take and, thus, no desire to make or take delivery. Delivery is made and demanded to test markets and to force price relationships into line but the better the contract, the less this occurs.”<sup>91</sup>

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<sup>89</sup> Hieronymus, at pp. 152-3.

<sup>90</sup> Hieronymus, at p. 351.

<sup>91</sup> *Id.*

Professor Hieronymus also noted, however, that “even the most casual student is aware that cash prices of storable commodities, particularly grains, are nearly always higher than the futures during delivery month. These differences arise out of technical considerations of delivery, are limited in their possible size, and do not violate the principle.”<sup>92</sup> Limited price differences are to be expected, while large discrepancies between the cash price and futures price – a lack of convergence – indicate that the futures market is not functioning properly. Once the price discrepancies are of such magnitude that it is no longer possible to use the futures market to effectively manage price risks in the cash market, the futures market would no longer be performing its primary function. The increasing lack of price convergence over the past few years in the wheat market has caused a great deal of turmoil within the grain industry and has led to several major efforts to determine the cause of the breakdown and proposals for effective solutions.

### C. Key Market Terms

To understand the reasons for the lack of price convergence in the wheat market in recent years, its impact on commodity trading, and the contributing role of speculation, this section provides additional information on key market terms such as basis, price spreads, and carry.

#### 1. Basis

The difference between the cash price of a commodity and the futures price of that same commodity is defined as the “basis.”<sup>93</sup> The basis is expressed mathematically as:

$$\text{Basis} = \text{Cash} - \text{Futures}$$

At contract expiration, the basis at the contract delivery location should be zero, or close to zero. In other words, the two prices should converge.

<sup>92</sup> *Id.*, at p. 153. These technical considerations include differences in the price time of delivery under the futures contract, the precise quality (several grades may be deliverable), and differing costs associated with the physical delivery of the commodity under different delivery procedures. *Id.*

<sup>93</sup> For a general description of basis, futures trading, and hedging strategy, see CME Group, *Self-Study Guide to Hedging with Grain and Oilseed Futures and Options*. In the Executive Summary and Section V of this Report, basis is calculated as  $\text{Basis} = \text{Futures} - \text{Cash}$  in order to give a positive value to the basis, which makes display and interpretation of the trends in basis easier to follow.



In the previous example of a grain elevator's hedging its cash purchase of wheat through the futures market, Figure 17a showed the cash and futures prices of the wheat held by the elevator over a six-month period from July to December. At the time the hedge was initiated in July, the cash price was \$4 and the futures price was \$6 for a resulting basis of -\$2 per bushel. This is commonly referred to as the basis being "2 under." In this example, when the December futures contract expired, the cash price and futures price had converged at \$3, for a resulting basis of zero.

Because both the cash price and the futures prices of a commodity vary with time, the basis varies with time as well. In addition, at any particular time, there may be multiple different cash prices for a commodity, depending upon the precise grade of the commodity, the location of the commodity, and the costs of transporting the commodity to market. The basis will vary, therefore, according to the commodity's attributes and location. At any given time, the same crop could give rise to a variety of basis calculations, depending upon specific variables in the crop and the market where it is to be sold. A buyer or seller of a crop must take into account each of those variables when computing the basis for a particular sale or purchase.

In addition, many crop sales do not take place at exactly the same time as a futures contract expires – in the case of wheat, for example, there are only five contract expiration dates per year. Timing differences mean that, on the date that a grain elevator actually sells a portion of its grain and lifts its hedge, the basis will not be zero, but rather some other value, either positive or negative. In the previous example of a wheat hedge placed by a grain elevator on July 15, when the basis was 2 under, if the subsequent basis at the time the hedge is lifted is positive – meaning the cash price is greater than the futures price – the grain elevator will receive additional gains because the sale of the cash commodity will produce more money than is needed to buy back the futures contract. If the basis is negative at the time the crop is actually sold – meaning the futures price is greater than the cash price – then the grain elevator will lose money, because the sale of the cash commodity will not generate sufficient money to cover the cost of buying back the futures contract. In short, whether the hedging strategy

produces gains or losses depends how the basis has changed from when the hedge was initiated to when it is lifted.<sup>94</sup>

Although the cash price and the futures price generally can be expected to converge as a contract nears expiration, significant variations can and do occur. Crop shortages in the cash market, for example, may suddenly elevate cash prices and cause the basis to rise sharply. In other instances, such as when a future shortage of wheat is expected, the prices in a futures market can rise more rapidly than in the cash market. Price increases in the futures market relative to the cash market will narrow the basis or even produce a negative value, disrupting price convergence at contract expiration. Price volatility in the futures market may also disrupt the normal relationship between the cash and futures markets, thereby causing the basis to become volatile as well.<sup>95</sup>

Traders often measure the effectiveness of hedging strategies by examining the behavior of the basis. If the futures and cash markets behave as predicted – converging at contract expiration with a basis that approaches zero as the contract ends – a straightforward hedging strategy should result in positive returns. If, contrary to expectations, the basis does not behave as predicted, the hedging strategy may result in a loss. The ability to accurately forecast the relationship of the futures and cash prices – the behavior of the basis – is critical to being able to successfully hedge.<sup>96</sup> Professor Hieronymus emphasizes: “[H]edging is not insurance. Hedging is an intricate activity, requiring substantial

<sup>94</sup> More generally, the profitability of a hedge depends upon whether the hedger is “long” the basis (i.e., buying in the cash market and selling futures) or “short” the basis (i.e., selling in the cash market and buying futures) and the subsequent movement of the basis. If a hedger is long the basis and the basis increases (i.e., the cash price increases relative to the futures price), the hedger will gain the amount of the increase in basis. If the hedger is long the basis and the basis narrows (i.e., the cash price decreases relative to the futures price), then the hedger will lose the amount of the decrease in basis. Conversely, if a hedger is short the basis and the basis increases, then the hedger will lose the amount of the increase in basis, and if the basis decreases the hedger will gain the amount of the decrease. In the previous example, the elevator was “long” the basis (buying in the cash market and selling futures) and the basis increased from 2 under to 0, so the hedger realized \$2 in gains.

<sup>95</sup> “True basis risk is the movement in the basis not attributable to the convergence of spot and futures prices.” Williams, *The Economic Function of Futures Markets*, at p. 107.

<sup>96</sup> Commercial participants who believe that the basis will behave in a predictable way may purchase a commodity and initiate a hedge solely to capture the gains from the expected movement in basis. In this instance, a hedger may actually be speculating in basis. Similarly, a speculator may acquire physical assets in order to be able to capture these types of gains from the more predictable movement in basis rather as compared to the highly speculative changes in absolute prices. Thus, it can be difficult to determine whether a hedger is hedging, a speculator is speculating, a hedger is speculating, or a speculator is hedging. In all instances, the trader is seeking to profit from the relative changes in the futures and cash prices.

knowledge and operational skill. . . . The essence of hedging is speculation in basis.”<sup>97</sup>

Even though the basis can be volatile, because convergence does occur in properly functioning markets, the basis is far more predictable than the absolute level of prices for a commodity in either the cash or the futures markets. Put another way, although the futures market and the cash market are each totally unpredictable, the relationship between the two markets is generally predictable because they are closely tied to each other. The two markets should converge as a futures contract nears expiration, with arbitrage trades possible between the two markets to force convergence if necessary.

Research shows that there is much less uncertainty and risk in attempting to speculate on or predict the relationship between the cash and futures market – the basis – than in speculating on or predicting the absolute level of prices.<sup>98</sup> According to Professor Peck, hedging “is done to profit from the reliably predictable difference in prices in the two markets. . . . To the extent that the basis is both more stable and more predictable than absolute price levels over relevant storage periods, [hedging] reduces the business risks inherent in commodity storage.”<sup>99</sup>

At the same time, if a once predictable basis relationship becomes unpredictable, then hedging becomes as risky as outright speculation in

<sup>97</sup> Hieronymus, at pp. 150-1.

<sup>98</sup> In *Optimal Grain Marketing: Balancing Risks and Revenue* (1999), the National Grain and Feed Foundation advised that seasonal price spread patterns appear “very predictable. In 78 of 89 years, the record shows that the farm price [for corn] at harvest will not be exceeded later in the year by an enormous amount – just the 10 to 15 percent carrying charge.” In the other 11 years, however, “the farm price at harvest could be dramatically exceeded later in the year by as much as 40 to 100 percent,” due to war politics, drought, and wetness, “factors which must surely be deemed unpredictable.” *Id.* at pp. 4-5. See also Kevin C. Dhuyvetter and Terry L. Kastens, *Marketing Grain – Things to Think About*, paper prepared for Risk and Profitability Conference, Kansas State University, August 19-20, 2004 (“While price levels vary considerably from year to year due to supply and demand conditions, the difference between futures prices and cash prices (i.e., basis) tends to be more stable. The important implication of this year-to-year stability in basis is that historical basis levels often are a relatively good indicator of future basis levels and thus a historical average is a reasonable forecast. Research generally has shown that there is little benefit to complex models compared to historical averages.”).

<sup>99</sup> Peck, *The Economic Role of Traditional Commodity Futures Markets*, at p. 15. Professor Peck, like Professor Hieronymus, describes hedging not as insurance but as a form of speculation, but of much less risk and uncertainty than the traditional characterization of speculation as pertaining to absolute price levels. In this instance Professor Peck was describing a hedger that stores a commodity – as opposed to selling it – to take advantage of changing price relationships. Working observed: “Most hedging is done in the expectation of a change in spot-future price relations, the change that is reasonably to be expected being often indicated quite clearly by the current spot-future price relation.” Working, *Futures Trading and Hedging*, at p. 148.

absolute price levels. “In fact, in those cases where the basis is as volatile as the spot price of the commodity, the hedger moves naturally into holding inventories unhedged, i.e., into ordinary speculation, because there is no risk reduction from hedging.”<sup>100</sup>

## 2. Price Spreads and “Carry”

The difference between two commodity prices – such as between a cash price and futures price, or between the prices of two futures contracts – is often called a “price spread.” The basis is one particular type of price spread: it is the difference between the cash price and the nearest futures contract that is about to expire. Just as an understanding of the behavior of the basis helps to evaluate hedging strategies, understanding the behavior of a larger set of relationships between futures prices aids in the understanding of other trading strategies, speculation, and commodity storage patterns.

A key principle behind price spreads in the futures markets is that, in an idealized, properly functioning futures market, the price of one futures contract should not exceed the price of another futures contract by more than the cost of storing the commodity over the period of time between the two contracts. This storage cost, often referred to as the “carrying cost,” encompasses the expenses that a seller would incur to store the commodity for a specified period of time.<sup>101</sup> A futures market is said to be at “full carry” when the price spread between the second and first month futures contracts is large enough to cover the full costs of storing the commodity over the time period between those two futures contracts. If that price spread provides less than the full costs of storing the commodity over that time period – such that it provides only a certain percentage of the full costs of storage – that market is often described as providing that percentage of full carry. Many traders prefer to express price spreads in terms of the percentage of storage costs it provides – the percentage of full carry – rather than in terms of dollars

<sup>100</sup> Paul H. Cootner, *Speculation and Hedging*, Proceedings of a Symposium on Price Effects of Speculation in Organized Commodity Markets, Food Research Institute Studies, Stanford University, Vol. VII Supp. (1967), at p. 75 (available in [farmdoc](#) archives). “[N]o hedging policy and no future contract maturity can assure a merchant that he will receive the opportunity rate of return on his inventory. . . . In most circumstances, hedging is really a form of speculation – speculation on the basis. It has all the characteristics of speculation even though it is an essential normal aspect of doing business. It differs from the speculation of buying or selling futures only because the variance of the outcome is usually much less.” *Id.* at pp. 74-5.

<sup>101</sup> The true carrying cost consists of not only payments to an elevator to store the grain, but also additional expenses such as the loss of interest that could have been earned on the cash used to purchase the commodity, and insurance to cover the value of the commodity during the period of storage. Hieronymus, at p. 155.

and cents, since it provides a uniform measure of the size of a price spread.

If the price difference between two successive futures contracts were greater than the cost of storing the commodity over the time period involved, then a firm could profit by purchasing the earlier futures contract at the lower price, while simultaneously selling it at the higher price of the later futures contract. Traders would theoretically engage in sales based upon the price spread between the two contracts until the demand for the earlier futures contract pushed up its price and sales of the later futures contract reduced its price, bringing them into a new equilibrium. For this reason, the price of futures contract for the delivery of a commodity in a later month should never exceed the price of a futures contract for an earlier month by more than the full cost of holding the commodity between those months.<sup>102</sup>

The opposite situation, however, is not true. Longer-term futures contracts may sell at a price that is too low to recover the carrying costs for commodities. In the cash market there are significant transaction costs and potential bottlenecks in procuring commodities, and there are severe economic consequences for any firm that runs out of inventory. Many firms therefore keep commodities in inventory even if they cannot fully recover the costs of storing that inventory through the sale of later futures contracts. Professor Williams explains:

“Firms hold stocks of physical commodities for much the same reason they hold money. Because of the great difficulty and expense in moving commodities like wheat and copper quickly to where they are needed, firms will hold commodities despite spreads below full carrying charges.”<sup>103</sup>

<sup>102</sup> The difference between the cash price and the price of the nearest futures contract (i.e., the basis) is not subject to this constraint. “[T]his upper limit on the carry in futures spreads does not necessarily apply to cash market carry, which includes a local basis. If a harvest is exceptionally large and grain supplies pressure the market to either purchase or find a storage location, cash market spreads can temporarily widen considerably to reward anyone offering grain a ‘home’ – either through purchase or storage.” *Optimal Grain Marketing: Balancing Risks and Revenue*, at p. 3.

<sup>103</sup> Williams, *The economic function of futures markets*, at p. 19. Why firms have held onto stocks of commodities when the futures prices were lower than full carry has puzzled economists for many years. Keynes postulated the theory of “normal backwardation” – that the lower futures price that hedgers were willing to pay to speculators reflected a premium that commodity producers were willing to pay to the speculators to assume the risks that the producer-hedgers desired to transfer. Years of research, however, failed to detect any evidence of “normal backwardation.” Charles S. Rockwell, *Normal Backwardation, Forecasting, and the Returns to Commodity Futures Trading*, Food Research Institute Studies, Stanford University, Supplement to Vol. VII (1967) (available in [farmdoc](#) archives). Working was one of the first to develop what is now the prevailing theory that price spread necessarily depend upon the costs of storage of a

In fact, empirical data indicates that futures markets rarely provide for the full carrying costs between futures contracts. Except for instances in which the supplies of the cash commodity are unusually large, and near-term prices are falling relative to later prices as firms seek to unload their inventories, futures spreads have tended to be somewhat less than full carry.<sup>104</sup>

Carrying costs are only one factor in commodity pricing. Price spreads between cash and futures markets should be understood to be a function, not only of the costs of storing a commodity, but also existing prices in the futures market, pricing expectations, and the demand for the commodity in the cash market.<sup>105</sup> If the supply of a commodity is plentiful, and no future shortages are foreseen, then the spot price of the commodity in the cash market will likely fall relative to the futures price. The greater the supply of the commodity, the more the spot price and near-term futures prices will fall relative to the price of farther out futures contracts.

### 3. Pricing Trends in Carry and Inversion Markets

In addition to “basis,” “spreads,” and “carry,” there are several other related concepts and terms that describe the relationships between the prices of various futures contracts.

When the prices of grain futures contracts are higher than the current cash price, the futures market is said to be “a carry market.” In energy markets, this pattern is called “contango.” As explained previously, the price of a later futures contract should not exceed the price of an earlier futures contract by more than the cost of holding the commodity between those two contracts. If the difference in price between successive futures contracts is at this maximum – the cost of holding the commodity between these two contracts – then the market is said to be at “full carry.” When the market is at full carry, a grain producer or merchant that hedges can store grain from the expiration of one futures contract to another and fully recover the costs of storage. In

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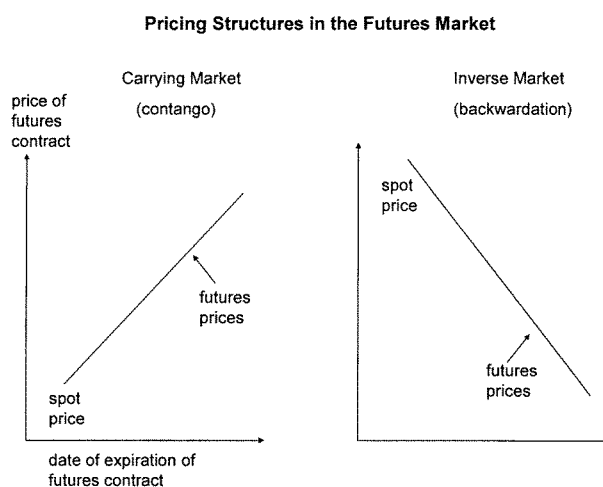
commodity. See, e.g., Working, *Theory of the Inverse Carrying Charge in Futures Markets*, reprinted in *Selected Writings of Holbrook Working*, at pp 3-24.

<sup>104</sup> *Optimal Grain Marketing: Balancing Risks and Revenue*, at p. 4.

<sup>105</sup> Put another way, “the spot price is determined as the sum of the futures price dependent primarily on expectations, plus a premium dependent on the shortage of currently available supplies.” Working, *New Concepts Concerning Futures Markets and Prices*, at p. 254.

a full carry market, persons holding a commodity are able to recover the full costs of storing the commodity and thus tend to accumulate inventories of the commodity.

When the prices in the grain futures market are lower than the current cash price, the market is said to be an “inverse market.” The corresponding term in the energy markets is “backwardation.” In an inverse or backwardated market, a producer or merchant cannot recover any of the costs of storing a commodity through a hedging strategy. Most producers and merchants reduce inventories during an inverse or backwardated market, choosing to sell the commodity rather than store it at a loss.



**Figure 18.** Basic relationships between spot and futures prices.

Commercial firms and traders base many of their hedging strategies and inventory management decisions on the relative prices of the various contracts in the futures markets. Simply put: “Commodities move into storage when the price of storage is favorable and move out of storage when the price is unfavorable.”<sup>106</sup> The greater the carrying charge provided by the futures market, the more inventory firms will hold in storage and hedge those inventories through additional sales of futures contracts. To the extent that the market will “pay” for a firm’s costs in holding inventory through the price relationships in the futures

<sup>106</sup> Hieronymus, at p. 160.

markets, that firm will attempt to take advantage of such opportunities through hedging. In an inverse (or backwardated) market, firms will reduce their inventories as much as practicable, while still ensuring that they have sufficient inventories to meet anticipated demands.<sup>107</sup>

#### **D. Position Limits and Hedge Exemptions**

To understand the nature and extent of hedging, and speculation in the commodity markets, it is also important to understand the statutory and regulatory limits imposed on the amount of speculation in these markets.

Section 4a(a) of the Commodity Exchange Act declares that excessive speculation in the price of a commodity traded on an exchange can create an undue burden on interstate commerce and directs the CFTC to establish limits on the positions held by traders on futures markets in order to prevent “sudden or unreasonable fluctuations or unwarranted changes” in the price of commodities traded on an exchange. The Commodity Exchange Act states:

“Excessive speculation in any commodity under contracts of sale of such commodity for future delivery made on or subject to the rules of contracts markets or derivatives transaction execution facilities causing sudden or unreasonable fluctuations or unwarranted changes in the price of such commodity, is an undue and unnecessary burden on interstate commerce in such commodity. For the purpose of diminishing, eliminating, or preventing such burden, the Commission shall . . . fix such limits on the amounts of trading which may be done or positions which may be held by any person.”<sup>108</sup>

<sup>107</sup> Professor Peck summarizes the critical importance of futures markets to inventory management as follows:

“[F]utures markets do not determine whether storage will occur but affect the decision to store and the predictability of storage returns.

“In the absence of a futures market, the storage return is speculative and depends entirely on events that occur after the decision to store or not is made. With a futures market, storage returns can largely be determined at the time the decision to store is made if that decision is hedged with a classic, arbitrage hedge. . . . [Futures markets] guide inventory decisions in a rational way. In periods of surplus the market reflects fully carrying charges and thus induces storage. In periods of shortage less than full costs are available, inducing merchants to sell unneeded stocks. . . . That the storage decision can be hedged implies that risks are reduced and more storage is likely at all prices.”

Peck, *The Economic Role of Traditional Commodity Futures Markets*, at pp. 44-5.

<sup>108</sup> 7 U.S.C. §6a(a) (2006).



The statute states that these limits shall not be applicable to “bona fide hedging transactions,” and authorizes the CFTC to define the term “bona fide hedge.”

### 1. Position Limits

For many years, to prevent price manipulation and excessive speculation, the CFTC has maintained and enforced position limits for futures contracts related to certain agricultural commodities, including wheat.<sup>109</sup> The CFTC explains: “For several markets (corn, oats, wheat, soybeans, soybean oil, soybean meal, and cotton), the limits are determined by the Commission and set out in Federal regulations (CFTC Regulation 150.2, 17 CFR 150.2). For other markets, the limits are determined by the exchanges.”<sup>110</sup>

Position limits restrict the number of futures contracts that a commodity trader can hold at a time.<sup>111</sup> These limits restrict the amount of trading that can be conducted by a single person on the regulated futures markets to prevent corners, squeezes, and other trading activities that can artificially inflate or depress commodity prices – so-called unwarranted or undue price fluctuations. The CFTC has established three basic types of position limits: spot month, single-month, and all-months combined, each of which applies to wheat contracts.

**Spot month limit.** Because the potential for price manipulation and market congestion is highest in the month in which a futures contract expires and deliveries may occur (termed either the “spot,” “expiration,” or “delivery” month), the CFTC applies and requires the exchanges to apply more stringent position limits during the spot month than during other months. CFTC regulations pertaining to exchange-set limits state: “For physical delivery contracts, the spot month limit level must be no greater than one-quarter of the estimated spot month deliverable supply.”<sup>112</sup> Under existing CFTC-set position limits for

<sup>109</sup> See CFTC, Notice of Proposed Rulemaking, *Revision of Federal Speculative Position Limits*, 70 Fed. Reg. 12621 (March 15, 2005).

<sup>110</sup> These position limits also apply to options on futures. CFTC, *Speculative Limits*, CFTC website, at <http://www.cftc.gov/industryoversight/marketsurveillance/speculativelimits.html>.

<sup>111</sup> To calculate a particular trader’s position for purposes of applying these limits, the CFTC and the exchanges aggregate multiple positions subject to common ownership as if they were held by a single trader, and combine futures and option positions on those futures to obtain an aggregate future-equivalent position in a futures contract. 17 C.F.R. §§150.4, 150.5 (2008).

<sup>112</sup> 17 C.F.R. §150.5(b)(1) (2008). For the spot month in cash-settled contracts, an exchange must establish speculative position limits “no greater than necessary to minimize the potential for manipulation or distortion of the contract’s or the underlying commodity’s price.” *Id.*

wheat, no trader may hold more than 600 wheat contracts due to expire in the spot month. Table 3 provides the CFTC position limits for four grain commodities.

**CFTC Position Limits for Wheat, Corn, Soybean, and Oats**

Commodity	Spot Month	Single Month	All Months Combined
Wheat	600	5,000	6,500
Corn	600	13,500	22,000
Soybeans	600	6,500	10,000
Oats	600	1,400	2,000

**Table 3.** CFTC position limits for selected agricultural commodities.

Data source: CFTC.

**Single month limit.** The CFTC applies less stringent position limits in months other than the spot month because the potential for congestion, price distortion, and disruption of the cash market is lower than in the spot month. Nonetheless, single month limits are necessary to prevent individual traders from acquiring large positions that could distort the price of a particular futures contract.<sup>113</sup> Under existing CFTC position limits, for example, no trader may own more than 5,000 wheat contracts that expire in the same month.

**All-months combined.** The CFTC also imposes and requires the exchanges to impose an all-months combined position limit for agricultural commodities, which is a limit on the total number of contracts across all months that a trader may hold. CFTC regulations state that the all months-combined levels must be no greater than 10% of the average total open interest (outstanding contracts) in futures and options, up to an open interest of 25,000 contracts, with a marginal increase of up to 2.5% of the total open interest thereafter. The CFTC's regulations also allow the exchanges to establish all-months combined position limits based on other factors related to the customary size of speculative positions in the particular market, provided that such totals

<sup>113</sup> That unusually large positions in a single month can distort futures prices, even when the month is other than the spot month, was demonstrated in the Subcommittee's investigation into the trading practices of Amaranth, a hedge fund active in the natural gas market. See 2007 Report, *Excessive Speculation in the Natural Gas Market*.

do not have significant potential for market distortion.<sup>114</sup> Under existing CFTC position limits for wheat, no trader may hold a total of more than 6,500 wheat contracts for all months combined.

## 2. Hedge Exemptions

The purpose of position limits is to diminish or prevent the burdens on interstate commerce that result from excessive speculation in the commodity futures markets. The Congress has made it clear, however, that position limits should not apply to the legitimate use of the futures markets by commodity producers, merchants, or end-users to price their goods efficiently or to manage their price risks. The Commodity Exchange Act directs the CFTC to grant an exemption from established commodity position limits for “bona fide hedging transactions or positions.” Section 4a(c) of the Commodity Exchange Act states:

“No rule, regulation, or order issued under subsection (a) of this section shall apply to transactions or positions which are shown to be bona fide hedging transactions or positions.”<sup>115</sup>

The Commodity Exchange Act provides the CFTC with the discretion to define the term bona fide hedging transaction, “consistent with the purposes” of the CEA, in order to “permit producers, purchasers, sellers, middlemen, and users of a commodity or a product derived therefrom to hedge their legitimate anticipated business needs for that period of time into the future for which an appropriate futures contract is open and available on an exchange.”<sup>116</sup>

The purpose of this exemption is to allow commodity producers, merchants, and end-users to hedge their crops in the futures markets to protect against price risks arising from their commercial activities involving that commodity. The objective is to allow them to enter into a sufficient number of futures contracts to meet the legitimate needs of their commercial operations. One of the rationales underlying the exemption is that since hedgers are price neutral – because they are

<sup>114</sup> CFTC regulations state that such positions “shall not be extraordinarily large relative to total open positions in the contract, the breadth and liquidity of the cash market underlying each delivery month and the opportunity for arbitrage between the futures market and the cash market in the commodity underlying the futures contract.” 17 C.F.R. §150.5(c)(2) (2008).

<sup>115</sup> 7 U.S.C. §6a(c) (2006).

<sup>116</sup> *Id.* In recognition of the concern that large hedgers can affect prices in the same manner as large speculators, to help determine whether the CFTC has adequate authority and regulations to “prevent unwarranted price pressures by large hedgers,” in this section of the CEA, Congress also directed the CFTC “to monitor and analyze the trading activities of the largest hedgers . . . operating in the cattle, hog, or pork belly markets,” and report its findings to Congress. *Id.*

hedged they will neither gain nor lose money as the prices in the futures market change – they would have no motive to attempt to manipulate prices through large trades.

The CFTC first issued a regulation defining a bona fide hedging transaction in 1936, immediately following passage of the Commodity Exchange Act. The original definition essentially defined hedging as a sale or purchase of a contract for future delivery of a commodity if the sale or purchase was offset, in terms of quantity, by ownership or fixed-price purchases or sales of the same commodity in the cash market.<sup>117</sup> Since that time, the types of transaction that qualify for the bona fide hedge exemption have been expanded both by Congress and by CFTC administrative action.<sup>118</sup>

The current CFTC regulation states that the term “bona fide hedging transactions and positions” means transactions or positions in a futures contract or option:

“where such transactions or positions normally represent a substitute for transactions to be made or positions to be taken at a later time in a physical marketing channel, and where they are economically appropriate to the reduction of risks in the conduct and management of a commercial enterprise . . .”<sup>119</sup>

The CFTC regulation also requires that a bona fide hedging transaction arise from either: (1) a potential change in the value of an asset that a person owns, produces, processes, or sells or anticipates owning, producing, processing, or selling; (2) the potential change in value of liabilities that the person owes or anticipates incurring; or (3) the potential change in the value of services that the person provides or purchases, or anticipates providing or purchasing.<sup>120</sup> In addition, the CFTC regulation includes another overall qualification that:

<sup>117</sup> Allen B. Paul, *Treatment of Hedging in Commodity Market Regulation*, USDA Economic Research Service, Technical Bulletin No. 1538 (April 1976), at p. 2 (available in [farmdoc](#) archives).

<sup>118</sup> For example, in 1956, Congress amended the Commodity Exchange Act to include the “anticipatory hedge” as a bona fide hedging transaction, meaning that at the time of the purchase or sale of a futures contract the trader did not actually have to own, purchase, or sell a physical commodity, but rather only anticipate doing so. *Id.*

<sup>119</sup> 17 C.F.R. §1.3(z) (2008).

<sup>120</sup> *Id.*

“no transactions or positions shall be classified as bona fide hedging for purposes of section 4a of the Act unless their purpose is to offset price risks incidental to commercial cash or spot operations and such positions are established and liquidated in an orderly manner in accordance with sound commercial practices [and the additional requirements pertaining to anticipatory hedging or exemptions from spot month limits]. . . .”<sup>121</sup>

While there has been longstanding, broad consensus on the need to grant hedge exemptions for commodity producers, merchants, and end users to manage their price risks, granting similar exemptions to financial firms seeking to use the futures markets to manage their financial risks has been the subject of longstanding debate and controversy.

In 1986, Congress urged the CFTC to consider expanding the hedge exemption to include financial firms using the futures markets to manage various types of financial risks. The committee report by the House Committee on Agriculture on the Futures Trading Act of 1986, stated:

“The Committee wishes the Commission to consider giving certain concepts, uses, and strategies ‘non-speculative’ treatment under the Act and relevant Commission regulations, whether under the hedging definition or, if appropriate, as a separate category similar to the treatment given certain spread, straddle, or arbitrage positions: one, the concept of ‘risk management’ by portfolio managers as an alternative to the concept of ‘risk reduction’; two, futures positions taken as alternatives rather than temporary substitutes for cash market positions; three, other trading strategies involving the use of financial futures.”<sup>122</sup>

The report of the Senate Committee on Agriculture, Nutrition and Forestry emphasized that any actions taken by the CFTC in this regard should be consistent with its fundamental mission to prevent excessive

<sup>121</sup> *Id.* The regulation allows hedges of the actual amount of the sale or purchase of an anticipatory hedge (a hedge placed in advance of the actual sale or purchase of the commodity) up to the amount of the commodity typically bought or sold over a 12-month period. The CFTC permits these bona fide hedgers to apply for exemptions from the spot month limits. *Id.* at §§1.47, 1.48.

<sup>122</sup> H. Rept. 624, 99th Cong., 2nd Sess., at pp. 45-6 (1986).

speculation which causes unreasonable or unwarranted changes in commodity prices.<sup>123</sup>

In 1991, a firm asked the CFTC to grant it an exemption from the position limits in order to purchase and hold futures contracts to hedge its exposure to commodity futures prices from certain financial instruments, called swaps, which it planned to sell to pension funds and other institutional investors. The value of these swaps was to be linked to an index calculated from the prices of specified commodity futures contracts and so would fluctuate with the values of the underlying futures contracts. Because of this exposure to the price of specified futures contracts, the firm requested a hedge exemption so that it could purchase a sufficient number of futures contracts to hedge its swaps exposure. Based on its interpretation of the direction provided by Congress in the Futures Trading Act of 1986, the CFTC granted this request, even though the firm's trading on the futures market was not in connection with the production, sale, or use of any physical commodity.

According to the records provided to the Subcommittee by the CFTC, four swap dealers selling index-related swaps currently operate with hedge exemptions that allow them to hold much larger positions on the Chicago wheat futures market than would otherwise apply under the CFTC's speculative position limits. Two other firms that market index-related instruments have received permission from the CFTC to exceed the position limits by a specified amount under formal decisions by the CFTC to not enforce the standard limits with respect to the futures contracts held by these firms.

The next two sections of the Report trace the rise of commodity index trading, how the exemptions from position limits have facilitated index trading in the wheat market, and how index trading, in the aggregate, has contributed to unreasonable and unwarranted changes in the futures prices for wheat and constituted excessive speculation.

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<sup>123</sup> S. Rept. 291, 99th Cong., 2nd Sess., at pp. 21-2 (1986).

*"If you can look into the seeds of time,  
And say which grain will grow and which will not,  
Speak then to me . . ."*

--MacBeth, Act I, Scene III

#### IV. COMMODITY INDEXES

One of the most significant developments in commodity markets in recent years has been the increasing amount of trading in financial instruments whose value is linked to the value of a commodity index. Commodity indexes are typically calculated using a wide range of commodity futures contracts, such as futures contracts for agriculture, energy, and metal commodities. Although instruments linked to a broad-based commodity index have existed for several decades, it is only within the past few years that these index instruments have become a popular vehicle to speculate in commodity prices. Since 2000, a number of academic publications, financial trade journals, and marketing presentations by swap dealers have touted the alleged benefits of index instruments. As a result, the total value of index instruments – purchased mainly by financial institutions, insurance companies, pension funds, foundations, hedge funds, and wealthy individuals – has grown more than tenfold in five years, from an estimated \$15 billion in 2003, to at least \$200 billion in mid-2008.<sup>124</sup> The purchases of these index instruments have resulted in the injection of billions of dollars in passive, long investments into the agricultural, energy, and metals futures markets.

This section explains how commodity indexes work; how persons commonly make investments based upon a commodity index using swaps, exchange traded funds, or exchange traded notes; how speculative purchases of index instruments affect the futures markets; and how the standard commodity trading limits have been waived for swap dealers and other index traders through hedge exemptions and no-action letters issued by the CFTC. This section also discusses recent CFTC actions pertaining to index trading.

Section V of this Report presents evidence indicating that the large amount of index trading in the Chicago wheat futures market is one of

<sup>124</sup> CFTC, *Staff Report on Commodity Swap Dealers and Index Traders with Commission Recommendations*, at p. 3 (preliminary data). This estimate reflects both the actual amounts invested in commodity index related instruments and the appreciation in value of those investments due to increasing commodity prices.

the major reasons for the increasing gap between the futures prices and cash prices (the basis), and for the frequent failure of wheat futures prices and cash prices to converge as the futures contracts expire. These pricing distortions and breakdowns have imposed significant additional costs upon farmers, grain elevators, grain merchants, and wheat users, thereby resulting in an undue burden on commerce which necessitates regulatory action to alleviate.

#### A. Commodity Index Trading in Agricultural Markets

The full extent of the explosive growth of commodity index trading has only recently become apparent, since it is only within the last few years that the CFTC has collected and publicly reported data on the extent of index traders purchasing commodity futures. Prior to 2007, index-related trades were included in the overall data reported by commercial and non-commercial traders in the CFTC's traditional Commitment of Traders Report, its key compilation of information on the extent and nature of the participation on regulated commodity futures exchanges.<sup>125</sup> In January 2007, in response to requests from Congress, the agriculture industry, and others, the CFTC began to publish weekly data on the total or aggregate positions of index traders in agricultural futures contracts traded on those exchanges.<sup>126</sup>

This data appears in the CFTC's "Supplemental Commodity Index Trader Report." That CFTC report now provides the total positions in

<sup>125</sup> For the CFTC's explanation and description of its Commitment of Traders Report, see <http://www.cftc.gov/marketreports/commitmentsoftraders/index.htm>.

<sup>126</sup> Commodity Futures Trading Commission, *Commission Action in Response to the "Comprehensive Review of the Commitments of Traders Reporting Program"* (June 21, 2006), December 5, 2006. The CFTC concluded it was able to calculate the aggregate positions of index traders in agriculture futures markets, because: "A careful review of swap dealer positions shows that, with respect to agricultural commodities, swap dealers' OTC trading activities are generally limited to taking short OTC positions opposite pension funds or other index-based traders seeking to diversify portfolios by adding long commodities exposure. Thus, the swap dealers' futures positions are generally limited to long futures hedges offsetting their short OTC exposure to those pension funds or other index-based traders." *Id.*, at p. 11. At the same time, the CFTC concluded it could not perform a similar analysis with respect to index trading in the energy or metals markets. For energy and metal commodities, the CFTC found that the swap dealers' positions on the futures exchanges resulted from the netting of a variety of OTC exposures, many of which were not due to purchases or sales of commodity indexes. The CFTC found it was "difficult, if not impossible, to link these residual futures positions with any part of the underlying activity that makes up the book of the swap dealer. The Commission has concluded, therefore, that at present, including the energy and metal markets in the [Commitment of Traders-Supplemental] report would seriously mislead the public as to the actual amount of index trading and the amount of commercial trading that was present in those market." *Id.*, at pp. 11-12.



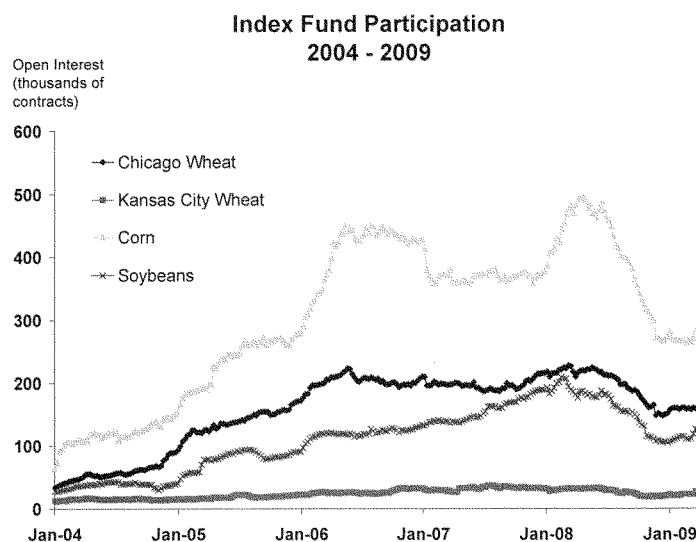
agricultural futures contracts of managed funds, pension funds, and “other institutional investors that generally seek exposure to commodity prices as an asset class in an unleveraged and passively-managed manner using a standardized commodity index.” In addition, it includes the aggregated positions of swap dealers “holding long futures positions to hedge short OTC commodity index exposure opposite institutional traders such as pension funds.”<sup>127</sup> Together, this data provides the best available information on the volume of commodity index trading in U.S. agricultural futures markets.

When it began publishing this weekly data in 2007, the CFTC also released data on index trading that it had acquired for the calendar year 2006. This older data enabled the CFTC weekly data series on index trader positions in commodity futures markets to extend back to January 2006. The CFTC staff then took another step by extrapolating its data on index positions held by swap dealers back to January 2004. Although the CFTC has not included this extrapolated data for the years 2004 to 2005 in its formal Supplemental Commodity Index Trader Report, the Commission has presented select portions of it to the public. At the Subcommittee’s request, the CFTC provided the complete extrapolated data series to the Subcommittee for use in this investigation.

The CFTC data provides useful information on the extent and history of commodity index trading in agricultural futures markets. Figure 19 presents, for example, CFTC data on the number of outstanding purchased futures contracts (long open interest) held by commodity index traders in the wheat, corn, and soybean markets over the past five years. The data shows a substantial volume of contracts in the corn futures market, with about half as many contracts in the wheat and soybean futures markets. Index trading in the corn market, for example, grew sevenfold from about 70,000 corn contracts in 2004, to a peak of almost 500,000 corn contracts in early 2008, before sharply dropping by half to about 270,000 contracts at year’s end. Index trading in the Chicago wheat market was smaller on an absolute level, but just as steep, growing sevenfold from about 30,000 contracts in early 2004, to a maximum of about 220,000 contracts in mid-2008, before dropping off at the end of the year to about 150,000 contracts. The amount of index trading in the Kansas City wheat market was substantially less, varying from about 15,000 contracts to 35,000 contracts.

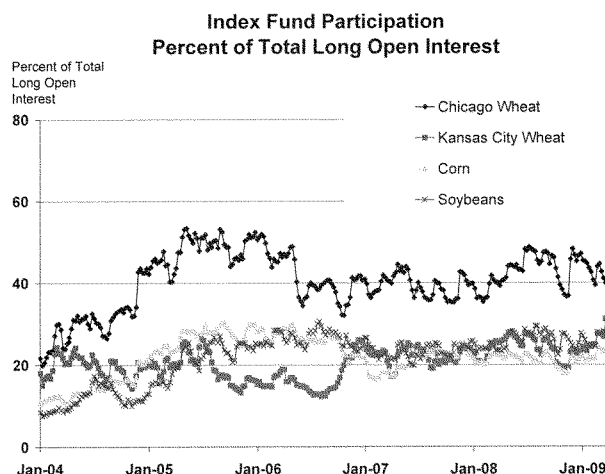
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<sup>127</sup> *Id.*



**Figure 19.** Total open interest due to index investments. Data source: CFTC.

Figure 20 breaks the data down a different way, showing the percentage of outstanding purchased contracts (total long open interest) held by index traders in the wheat, corn, and soybean markets. This data indicates that although there is a greater overall number of index fund contracts in the corn market, index traders have a relatively greater presence in the Chicago wheat market. In addition, the data shows that index trading constitutes a significantly larger share of the Chicago wheat futures market than the Kansas City futures market. It shows, for example, that in 2008, index traders held a significant share of the outstanding futures contracts – between 40 and 45% of the long open interest in the Chicago wheat futures market, and between 20 and 30% of the long open interest in the Kansas City wheat futures market.



**Figure 20.** Percent of long open interest held by index traders. Data source: CFTC.

### B. Components of a Commodity Index

Speculation in commodity index instruments has grown over the past five years, as they have become a popular investment strategy for large institutional investors, including hedge funds, pension funds, and university endowments, seeking to diversify their portfolios and profit from rising commodity prices. Purchasing a financial instrument whose value is linked to a commodity index enables an investor to get broad exposure to commodities without having to actually purchase quantities of each commodity or manage a portfolio of commodity investments. One investment consulting firm explains: “Commodity indices attempt to replicate the returns available to holding long positions in agricultural, metal, energy, or livestock investment, without the investor having to actively manage the positions.”<sup>128</sup>

A commodity index functions like an equities index such as the S&P 500 or the Dow Jones industrial average, in that it is computed on the basis of the value of its components. The value of a commodity index is derived from calculating the total value of a specified “basket” of commodities. Each commodity within the basket is assigned a specified weight, or percentage, and the value of each commodity within the index is obtained by multiplying the current price of a specified

<sup>128</sup> See, e.g., Alternative Investment Analytics, *Comparing Commodity Indices: Multiple Approaches to Return*, AIA Research Report, updated June 18, 2008.

futures contract for the commodity by the assigned weight for that commodity. The value of the index varies daily, along with the values of its component commodity futures.

There are a variety of commodity indexes, which are sometimes divided into “first-generation” and “second-generation” commodity indexes. The first-generation indexes have been around the longest, and differ from later indexes primarily in the manner and frequency with which the futures contracts are replaced (“rolled”) as they approach expiration.

The second-generation indexes were developed within the last few years to improve upon the performance of the first-generation indexes. The second-generation commodity indexes have more complex strategies for selecting the particular futures contracts used to calculate the index, and typically select futures contracts that expire later in time than the futures contracts used in the first generation indexes.<sup>129</sup> Because the second-generation index futures contracts are farther from maturity, they need to be replaced (“rolled”) less frequently than in the first-generation indexes.

Table 4 identifies a few key commodity indexes and the commodities and weights used to calculate them.<sup>130</sup> As the Table shows, index funds are generally weighted most heavily toward energy commodities, particularly crude oil. In both the S&P Goldman Sachs Commodity Index (GSCI) and the Deutsche Bank Liquid Commodity Index (DBLCI), crude oil constitutes at least one-third of the index. Agricultural commodities, grains in particular, are usually the second most heavily weighted commodity sector in indexes. The more heavily weighted an index is in any particular commodity sector, the more that index’s overall performance will depend upon the performance of that commodity sector.

<sup>129</sup> See, e.g., *Comparing Commodity Indices: Multiple Approaches to Return*, AIA Research Report, updated June 18, 2008.

<sup>130</sup> The commodity index compositions are presented as of March 2009, and are found at the following web pages, last visited on March 26, 2009: [http://www2.standardandpoors.com/portal/site/sp/en/us/page.topic/indices\\_gsci/2,3,4,0,0,0,0,0,2,1,0,0,0,0,0.html](http://www2.standardandpoors.com/portal/site/sp/en/us/page.topic/indices_gsci/2,3,4,0,0,0,0,0,2,1,0,0,0,0,0.html) (S&P GSCI); <http://www.djindexes.com/aig/index.cfm?go=about> (DJ-AIG); <http://dbfunds.db.com/dbc/index.aspx> (DBLCI); [http://www.jefferies.com/pdfs/RJCRB\\_Index\\_Materials.pdf](http://www.jefferies.com/pdfs/RJCRB_Index_Materials.pdf) (Reuters/Jefferies CRB); <http://www.rogersrawmaterials.com/page1.html> (Rogers International Index). The Rogers Index also includes the following commodities with percentage weights of 1 or less: rice, azuki beans, greasy wool, rubber, lumber, barley, canola, oats, palladium, and soybean meal.

Commodity Index Composition and Weights (%) (as of March 2009)

Commodity	S&P GSCI	Dow Jones- AIG (DJAIG)	DBLCI	Reuters/ Jefferies CRB	Rogers Int'l Commodi ty Index
WTI crude oil	31.98	13.8	33.57	23	21.0
Brent crude oil	12.69				14.0
Unleaded gasoline	3.39	3.7		5	3.0
Heating oil	4.82	3.6	17.00	5	1.8
GasOil	4.44				1.2
Natural Gas	7.85	11.9		6	3.0
<b>Total Energy</b>	<b>65.18</b>	<b>33.0</b>	<b>50.57</b>	<b>39</b>	<b>44.0</b>
Aluminum	2.58	7.0	10.22	6	4
Copper	2.29	7.3		6	4
Lead	0.33				2
Nickel	0.68	2.9		1	1
Zinc	0.56	3.1			2
<b>Total Industrial Metals</b>	<b>6.43</b>	<b>20.3</b>	<b>10.22</b>	<b>13</b>	<b>13</b>
Gold	3.49	7.9	14.73	6	3
Silver	0.33	2.9		1	2
<b>Total Precious Metals</b>	<b>3.82</b>	<b>10.8</b>	<b>14.73</b>	<b>7</b>	<b>5</b>
Wheat, CME	5.20	4.8	12.15	1	7.00
Wheat, KCBOT	1.23				
Corn	4.93	5.7	12.33	6	4.75
Soybeans	1.84	7.6		6	3.35
Soybean oil		2.9			2.17
<b>Total Grains</b>	<b>13.20</b>	<b>20.7</b>	<b>24.48</b>	<b>13</b>	<b>17.27</b>
Cotton	1.06	2.3		5	4.20
Sugar	1.84	3.0		5	2.00
Coffee	0.90	3.0		5	2.00
Cocoa	0.45			5	1.00
Orange Juice				1	0.66
<b>Total "Softs"</b>	<b>5.65</b>	<b>8.3</b>	<b>---</b>	<b>21</b>	<b>9.86</b>
Feeder Cattle	0.83				
Live Cattle	3.36	4.3		6	2
Lean Hogs	1.79	2.4		1	1
<b>Total Livestock</b>	<b>5.78</b>	<b>6.7</b>	<b>---</b>	<b>7</b>	<b>3</b>

Table 4. Data sources: identified in Footnote No. 130.

"Sub-indexes" consist of commodities in one particular sector. For each index, there may be five or six sub-indexes, such as an energy sub-index, an agricultural sub-index, or an industrial metal sub-index. Investors seeking exposure to a particular commodity sector rather than exposure to a broad set of commodities may prefer to invest in a sub-index rather than a broad index.

**The "Roll."** The value of a commodity index depends upon the values of the futures contracts within the index that are within a

specified amount of time away from expiration. As time goes forward, however, these futures contracts move closer toward expiration and eventually have to be replaced with futures contracts that are once again within the specified time from expiration. Most first-generation commodity indexes use the price of the second month futures contract to compute the value of the index. The first month futures contract is the futures contract that is nearest expiration; the second month contract is the next one after that. After a certain amount of time, the first month futures contract will expire and the futures contract that had been the second-month futures contract now becomes the first-month futures contract. At that point, the managers of the index must replace the first month contracts with a new set of contracts which, at the time of their selection, serve as second month contracts. This replacement process, which takes place on a periodic basis, is called the “roll.”<sup>131</sup>

The roll by the index fund manager does not actually result in the purchase or sale of any futures contracts – it is only a computational undertaking – since the index itself has no underlying assets. However, as explained below, the computational roll by an index manager will typically result in a large number of actual futures transactions by swap dealers and others who have hedged their exposure to the value of the index and need to match the composition of the readjusted index with actual holdings of futures contracts. In this way, an index roll has a direct and sometimes significant impact on the futures markets by leading to a large number of similar trades within a short period of time.<sup>132</sup>

<sup>131</sup> The various indexes have established similar procedures for accomplishing the periodic roll. The indexes all have identified a series of dates, typically from the fourth or fifth day of a month, during which they will replace what have just become first-month futures contracts with a new set of later-month futures contracts. The roll is accomplished at an equal rate over this series of trading days until 100% of the value of the first-month futures contracts is replaced with an equivalent value of later-month futures contracts.

Standard & Poor's describes the roll process as follows: “The simplest way to think of the process is as rolling from one basket of nearby futures (the first nearby basket) to a basket of futures contracts that are further from expiration (the second nearby basket). . . . Taking the first day of the roll as an example, just before the roll takes place at the end of the day, the S&P GSCI consists of the first nearby basket. That portfolio, constructed the night before and held throughout the fifth business day, has a dollar value. For the roll, that dollar value is distributed across the first and second nearby baskets such that the number of contracts or the quantity of the first nearby basket is 80% of the total and the quantity held of the second nearby basket is 20% of the total.” Standard & Poor's, S&P GSCI, FAQ; at [http://www2.standardandpoors.com/spf/pdf/index/SP\\_GSCI\\_FAQ\\_Web.pdf](http://www2.standardandpoors.com/spf/pdf/index/SP_GSCI_FAQ_Web.pdf).

<sup>132</sup> To ensure that the futures contracts they have purchased to offset their exposures to the futures prices in the index-related swaps they have sold, index traders will roll their index-related futures contracts during the same roll period that the index manager rolls the contracts used to calculate the index. Some commodity traders told the Subcommittee that they reduce their

### C. Three Types of Commodity Index Instruments

Investors cannot invest directly in a commodity index, since the index itself, like the S&P 500 or the Dow Jones Industrial Average, is just a mathematically calculated value based upon the relative weights and prices of the commodity futures contracts within the index. Financial institutions have devised several types of financial instruments to enable investors to gain exposure to the value of a commodity index. Presently, there are three key types of financial instruments that investors can purchase to provide a financial return based upon the value of a commodity index: commodity index swaps, exchange traded funds, and exchange traded notes.

**Commodity Index Swaps.** The most common type of commodity index instrument is a financial instrument known as a “swap” whose return is based upon the performance of a specified commodity index.

A commodity index swap is, in essence, a financial instrument that pays a return based on the value of a specified index. A “swap dealer,” such as a bank or broker-dealer, typically offers a qualified investor the opportunity to purchase, for a fixed price, a swap whose value is linked, on any given date, to the value of a specified commodity index on that date.<sup>133</sup> The purchase price of the swap will be the value of the index on the purchase date. If the value of the commodity index increases, the value of the swap to the purchaser will increase by a corresponding amount. On the other hand, if the value of the commodity index falls, the value of the swap will also fall. Typically, although these swaps often may be sold back to the swap dealer at any time, the large institutions that purchase these types of swaps hold onto them for long periods of time.

Commodity index swaps are not traded on regulated futures exchanges. Instead they are sold “over the counter,” outside of the statutory and regulatory framework that applies to futures exchanges.

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trading during the time when index traders are rolling their futures contracts; other traders apparently try to anticipate or respond to the rolls. Because of the many possible trading responses to commodity index rolls, it is difficult to determine exactly how such rolls affect futures prices. Depending on the trading strategies adopted by the other traders in the market at the time, the impact of the roll may vary from roll to roll.

<sup>133</sup> Swap dealers are typically large diversified financial institutions. Among the leading swap dealers operating in the United States are Bank of America, Citibank, Goldman Sachs, HSBC Bank, and J.P.Morgan Chase. See, e.g., *OCC's Quarterly Report on Bank Trading and Derivatives Activities: Fourth Quarter 2008*, Table 1: “Notional Amount of Derivative Contracts: Top 25 Commercial Banks and Trust Companies in Derivatives,” U.S. Comptroller of the Currency, December 31, 2008.

Because these swaps are traded outside of the exchanges and because current law prohibits CFTC regulation of swaps,<sup>134</sup> the CFTC has virtually no direct data on who purchases them, how many are sold over what time period, or the prices charged.

The CFTC does possess indirect data on these swaps, because the swap dealers who sell them typically hedge their exposure by purchasing the referenced futures contracts on a futures exchange. For example, if a swap dealer has sold a swap whose value is linked to an index consisting of 50 percent oil and 50 percent wheat, the swap dealer will owe the investor a greater amount if the prices of oil and wheat increase. To avoid this financial exposure, the swap dealer typically purchases an equivalent amount of the specified futures contracts in oil and wheat on a futures exchange. If the swap increases in value due to increases in the oil and wheat futures prices – which means the swap dealer owes the swap purchaser more money – the swap dealer’s financial exposure is offset by the fact that the swap dealer also owns the referenced futures contracts whose prices rose. The swap dealer is then said to be “short” oil and wheat in the over-the-counter swap market, but “long” oil and wheat on the futures exchange, for a net exposure of zero. The swap dealer, who charges a fee for selling the swap, then becomes indifferent to any subsequent change in the value of the commodity index.

While the net exposure of swap dealers who sell commodity index swaps may be minimal as a result of this hedging, the hedging process itself has, in effect, transmitted the commodity index swap purchases into purchases of contracts on the futures markets. In this manner, even though commodity index investors typically do not purchase future contracts directly, their swap purchases often result in the purchase of futures contracts on an exchange by their swap dealers. Those purchases, in turn, can affect prices on the exchange by creating an additional demand for the futures contracts referenced in the commodity indexes.

Although it may be possible for swap dealers to hedge some of their commodity index swap exposures by entering into over-the-counter transactions that offset these exposures (i.e., “internal netting”), the CFTC indicates that swap dealers frequently use the futures markets for the purpose of obtaining these hedges or offsets. The CFTC states: “As

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<sup>134</sup> The Commodity Futures Modernization Act of 2000, enacted into law as part of the Consolidated Appropriations Act of 2001, P.L. 106-554, contains several provisions which prohibit CFTC regulation of any type of swap.



a result of the growth of the swap market and the dealers who support the market, there has been an associated growth in the open interest of the futures markets related to the commodities for which swaps are offered, as these swap dealers attempt to lay off the residual risk of their swap book.”<sup>135</sup>

**Exchange Traded Funds.** In the past few years, banks and other financial institutions have devised another type of instrument, known as exchange traded funds (ETFs), to mirror the performance of specified commodity indexes. Unlike the purchase of a commodity index swap from a swap dealer, which is a bilateral transaction between the investor and the swap dealer, ETFs are constructed in such a way that retail investors can buy and sell ETF shares on a stock exchange, in the same way investors buy and sell shares of stock on a stock exchange. The ETF is structured so that the value of the ETF shares should reflect the value of the commodity index upon which they are based.

Purchasers of ETF shares, who can monitor the shares’ value in the same manner as the value of stocks traded on a stock exchange, can sell their ETF shares to any other buyer through the stock exchange on which the shares are offered.<sup>136</sup> Although the mechanism by which

<sup>135</sup> CFTC, *Staff Report on Commodity Swap Dealers and Index Traders with Commission Recommendations*, at p. 12.

<sup>136</sup> Due to the arbitrage mechanism used to ensure that ETF values track commodity index values, the net asset value of the ETF may not always equal the value of the ETF trading on the exchange. Only large, authorized institutions – usually termed “Authorized Participants” – are permitted to purchase blocks of shares directly from an ETF issuer. Authorized Participants that redeem blocks of shares from the ETF must obtain the actual underlying assets – either futures contracts or, in some cases, securities – and deposit them with the ETF. Authorized Participants then offer their shares to retail investors through a stock exchange. Unlike the Authorized Participants, retail investors cannot obtain or sell the underlying assets, but can only buy or sell their shares in the fund through a broker in the secondary market on a stock exchange.

The Prospectus for a Deutsche Bank commodity ETF describes how this process works:

“The Shares of the Fund trade on the Amex like any other equity security.

“Baskets of Shares may be created or redeemed only by Authorized Participants. It is expected that Baskets will be created when there is sufficient demand for Shares that the market price per Share is at a premium to the net asset value per Share. Authorized Participants will then sell such Shares, which are listed on the Amex, to the public at prices that are expected to reflect, among other factors, the trading price of the Shares on the Amex and the supply of and demand for Shares at the time of sale and are expected to reflect, among other factors, the trading prices of the Shares on the Amex and the supply of and demand for Shares at the time of sale and are expected to fall between net asset value and the trading price of the Shares on the Amex at the time of sale. Similarly, it is expected that Baskets will be redeemed when the market price per Share is at a discount to the net asset value per Share. Retail investors seeking to purchase or sell Shares on any day are expected to effect such transactions in the secondary market, on the Amex, at the market price per Share, rather than in connection with the creation or redemption of Baskets.”

PowerShares DB Commodity Index Tracking Fund, Prospectus dated May 1, 2008, at p. 1.

investors in ETFs gain exposure to a particular commodity index is different from the purchase of a commodity index swap from a swap dealer, the end result is the same – the purchaser of an ETF gains exposure to the value of the commodity index upon which it is based.<sup>137</sup>

A key advantage of ETF shares is that they can be bought and sold as easily as individual stocks. ETFs provide a way for smaller investors who are not large enough to establish an account and purchase and sell swaps with a swap dealer to invest in commodity indexes. One investment analyst explains:

“At the most basic level, ETFs are just what their name implies: baskets of securities that are traded, like individual stocks, on an exchange. ... Unlike regulated open-end mutual funds, ETFs can be bought and sold throughout the trading day. They can also be sold short and bought on margin – in brief, anything you might do with a stock, you can do with an ETF.”<sup>138</sup>

To provide value to their shares, commodity-based ETFs hold the various futures contracts whose values are used to compute the index value. These ETFs typically hold a basket of futures contracts of commodities in proportion to the weighting of the commodities in the calculation of the index. As investments in the fund increase, the ETF typically will obtain additional commodity futures contracts to support the investments; as investments in the fund decrease, the number of commodity futures contracts held in the ETF typically decrease.<sup>139</sup>

The first ETF based on a commodity index was offered in 2006.<sup>140</sup> Since then many types of commodity ETFs have been created and marketed. “‘Whatever opinion you have about anything, there’s an E.T.F. for it,’ said Michael Metz, chief investment strategist at

<sup>137</sup> For a summary of the advantages and disadvantages of ETFs, see Christopher J. Traubsen, Exchange-Traded Funds: What You Should Know, Morningstar Commentary, at [http://news.morningstar.com/articlenet/article.aspx?id=3503&\\_QSBPA=Y&dType=etf](http://news.morningstar.com/articlenet/article.aspx?id=3503&_QSBPA=Y&dType=etf).

<sup>138</sup> Christopher J. Traubsen, Exchange-Traded Funds: What You Should Know, Morningstar Commentary, at [http://news.morningstar.com/articlenet/article.aspx?id=3503&\\_QSBPA=Y&dType=etf](http://news.morningstar.com/articlenet/article.aspx?id=3503&_QSBPA=Y&dType=etf).

<sup>139</sup> An Authorized Participant that wishes to create a basket of shares for sale to retail investors must purchase the appropriate number of commodity futures contracts and deposit them with the ETF in return for the additional basket of shares. In theory, the purchase of these futures contracts will cause the price of the commodity index to rise, while the sale of additional shares will cause the value of the shares on the exchange to fall, until they are once again in equilibrium. This arbitrage process theoretically works in a similar manner when investors want to sell their shares of the ETF on the exchange.

<sup>140</sup> John Spence, *Commodities ETF breaks new ground, Use of derivatives signals major shift for industry*, MarketWatch, February 6, 2006.

Oppenheimer & Company. ‘Everything is subject to gambling and speculation.’”<sup>141</sup> Several commodity ETFs track the broadly used commodity indexes, others track the sub-indexes, and some are even based upon the value of futures contracts for a single commodity. Single-commodity ETFs risk much more volatility than an ETF based on a broad basket of commodities.<sup>142</sup>

**Exchange Traded Notes.** A third commodity-based instrument involves exchange traded notes (ETNs). Commodity-based ETNs are designed and sold by banks and other financial institutions to permit retail investors to purchase shares of a debt security whose price is linked to that of a commodity index. Upon maturation of the note, the issuer of the ETN promises to pay the holder of each share of the note the value of a specified commodity index.

Retail investors can buy and sell shares in ETN notes on secondary markets, in the same manner as stocks traded on a stock exchange. Most commodity ETNs are traded on the NYSE Alternext exchange (formerly the American Stock Exchange).

ETNs offer certain advantages over ETFs. ETN share values exactly track the value of the underlying commodity index, and there may be tax advantages to these instruments compared to swaps or ETF shares.<sup>143</sup> On the other hand, there also are disadvantages. Most prominently, ETNs expose investors to the credit risk of the ETN issuer. If the issuer of the note goes bankrupt, then the ETN shares held by institutional and retail investors could lose all their value.<sup>144</sup>

The issuer of an ETN typically uses proceeds from the sale of shares to investors to make actual purchases of the futures contracts whose values are used to compute the index value to which the note is linked. As with exchange traded funds, the ETN issuer typically

<sup>141</sup> J. Alex Tarquino, *Many Roads to Commodities, Through E.T.F.'s*, New York Times, October 7, 2007.

<sup>142</sup> “Unless you think that we’re going back to the 16th-century spice trade, you should not be speculating on individual commodities.” J. Alex Tarquino, *A New Way to Play in Commodities*, New York Times, July 13, 2008 (remarks of Gary Schatsky).

<sup>143</sup> See, e.g., Seeking Alpha, *The ETN Market Heats Up With Goldman Launch; More On the Way*, August 6, 2007, at <http://seekingalpha.com/article/43585-the-etn-market-heats-up-with-goldman-launch-more-on-the-way>.

<sup>144</sup> Following the bankruptcy of Lehman Brothers in September 2008, for example, the NYSE Alternext exchange removed all of the ETNs issued by Lehman Brothers from listing on the exchange. NYSE Euronext News Release, October 21, 2008, at <http://www.nyse.com/press/1223288675336.html>.

constructs a basket of futures contracts to reflect the weighting of the commodities in the index. The issuer then relies on this commodity basket to hedge its exposure to the ETN shareholders for the value of the index. ETN issuers who purchase futures contracts, like swap dealers, create additional demand for the futures contracts in the relevant index and so may affect futures prices.

ETNs have gained in popularity over the past few years, but still hold a relatively small share of the market as compared to ETFs. One financial analyst reports: “As of 2008, there were close to 100 ETNs available to investors. Assets under management were more than \$6 billion, compared to \$600 billion for ETFs.”<sup>145</sup>

Table 6 lists the largest commodity-based ETFs and ETNs, based on total assets. Each of these funds had at least \$100 million in assets as of April 2009. Although the largest commodity ETFs have substantial assets, the aggregate amount of investments in commodity-based ETFs and ETNs represents a small fraction of the total investments in index-related instruments, which continue to be made primarily through commodity index swaps.

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<sup>145</sup> These figures represent the total value of investments in equity-based and commodity-based ETFs and ETNs. Larry MacDonald, *ETN Credit Risk May Outweigh Benefits For Some*, Investopedia.com, at <http://investopedia.com/printable.asp?a=/articles/bonds/08/credit-risk-exchange-traded-note.asp>.

**Largest Commodity ETFs and ETNs (as of April 30, 2009)**

Name	Symbol	Incep. Date	Assets (million s)	Returns (%)		
				2007	2008	Total
United States Oil	USO	4/10/06	2,929.40	46.82	-56.31	-27.33
DB Commodity Index	DBC	2/3/06	1,924.60	31.50	-31.73	-5.28
PowerShares DB Agriculture	DBA	1/5/07	1,748.80	N/A	-19.24	-1.22
United States Natural Gas	UNG	4/18/07	1,140.50	N/A	-36.08	-43.78
iPath DJ-AIG Commodity	DJP	6/6/06	929.00	14.90	-37.42	-15.21
iShares GSCI Commodity Id	GSG	7/10/06	782.80	31.62	-45.75	-23.75
iPath GS CrOil TR Idx ETN	OIL	8/15/06	664.10	47.53	-58.56	-33.73
PowerShares DB Oil Fund	DBO	12/06/07	194.90	N/A	-44.06	-11.00
ELEMENTS Rogers Agric ETN	RJA	10/17/07	193.80	N/A	-31.66	-25.53
ELEMENTS Rogers TR ETN	RJI	10/17/07	175.80	N/A	-42.43	-33.97
United States 12 Month Oil Fd	USL	12/06/07	162.00	N/A	-44.68	-39.82

**Table 6.** Prepared by U.S. Senate Permanent Subcommittee on Investigations, April 2009. Data Source: Indexuniverse.com, Data, at <http://www.indexuniverse.com/sections/data.html?task=showResults>.

#### D. Types of Commodity Index Returns

In general, financial instruments linked to a commodity index can offer an investor up to three possible sources of return: the spot return, the roll return, and the collateral return.<sup>146</sup> Commodity index swaps, ETFs, and ETNs typically offer investors either a spot return plus a roll return (termed the “Excess Return”), or all three returns – the spot return plus the roll return plus the collateral return (termed the “Total Return”).<sup>147</sup>

**Spot Return.** The spot return is the most straightforward. This return is derived from changes in the spot market prices of the commodities included in an index.

<sup>146</sup> See, e.g., Claude R. Erb and Campbell R. Harvey, *The Tactical and Strategic Value of Commodity Futures*, January 12, 2006.

<sup>147</sup> See, e.g., Standard & Poor’s, *S&P GSCI, Highlights and Definitions*, May 2007.

**Roll Return.** The roll return is derived from the periodic sale of futures contracts nearing expiration and the simultaneous purchase of futures contracts bearing more distant expiration dates (the roll). The return is the difference between the price of the futures contract being sold and the price of the futures contract being purchased. When the price of the futures contract being sold is less than the price of the futures contract being purchased (i.e., when the futures market is a carry market or in contango), the roll return will be negative. When the price of the futures contract being sold is greater than the price of the futures contract being purchased (an inverse or backwardated market), the roll return will be positive.

**Collateral Return.** The collateral return is the amount of interest earned on the amount of any collateral required for the purchase of a commodity index swap, ETF, or ETN. With respect to commodity index swaps, swap dealers usually require investors to fully collateralize their purchase. The investor purchasing a swap typically must deposit the full purchase price of the underlying commodity futures with the

**Commodity Return Terms**

**Spot return:** The gain (loss) in the price level.

**Roll return:** The gain (loss) from the periodic selling of near-term futures and buying of longer-term futures.

**Collateral return:** The interest earned on the collateral deposited into the margin account.

**Excess return:** Spot return + Roll return

swap dealer. The swap dealer then invests this collateral, which essentially functions as a margin deposit. Swap dealers typically invest the collateral funds in low-risk Treasury bills or bonds, which earn interest. When the swap is terminated, the swap dealer pays the amount of interest earned to the investor as part of the return payment on the swap. The interest payment arising from the investment of the collateral is termed the “collateral yield” or “collateral return.”<sup>148</sup>

Some ETNs and ETFs also provide a collateral return, since they may also require the purchasers of their shares to provide a deposit equal to the price of the commodity futures contracts included in the index and reflected in their shares.

As discussed below, over the past several decades the spot returns from commodity indexes have been relatively small. Because a “Spot Return” index will pay the investor a return solely based upon the change in the spot price of the commodity, there is not much interest in investing in an index that pays only a spot return. All of the major

<sup>148</sup> See, e.g., Standard & Poor’s, *Investing with the S&P GSCI Commodity Indices*, June 21, 2007 (powerpoint presentation).

commodity index instruments today provide either Excess Returns (spot return plus roll return) or Total Returns (spot return, plus roll return, plus collateral return).

### E. Commodity Index Rationale and Marketing

*“More importantly, we believe commodities offer an inherent or natural return that is not conditioned on skill.”*

--Ibbotson Associates, 2006.<sup>149</sup>

*“Bottom line, forward looking expected returns for commodity futures (as well as for stocks, bonds, hedge funds, anything) are just bets.”*

--Claude Erb and Campbell Harvey, 2006.<sup>150</sup>

#### 1. The Marketing of Commodity Index Instruments

Beginning about 10 years ago, a number of influential articles in financial journals asserted that there were significant benefits to investing in commodity indexes. A number of financial institutions also began to aggressively market these types of instruments. These articles and marketing presentations claimed commodity index instruments would help diversify a traditional portfolio of stocks and bonds, and that commodities offered protection against unexpected increases in the rate of inflation, a benefit that is not typically provided by stocks and bonds.<sup>151</sup> Additional arguments were that the price of commodities would rise as the global economy expanded and the demand for commodities increased.

In 2000, Robert J. Greer, one of the early proponents of investing in commodity indexes, wrote: “In addition to providing exposure to unexpected changes in inflation, commodity indexes may provide exposure to long-term growth in world demand that may also result in an

<sup>149</sup> Ibbotson Associates (commissioned by PIMCO), *Strategic Asset Allocation and Commodities*, March 27, 2006, at p. 4.

<sup>150</sup> Claude R. Erb and Campbell R. Harvey, *The Tactical and Strategic Value of Commodity Futures*, January 12, 2006, at p. 46.

<sup>151</sup> See, e.g., Greer, *The Nature of Commodity Index Returns*, *Journal of Alternative Investments*, Summer 2000, at pp. 45-53; Ibbotson Associates (Commissioned by PIMCO), *Strategic Asset Allocation and Commodities*, March 27, 2006; Vanguard, *Understanding Alternative Investments: The Role of Commodities in a Portfolio*, Vanguard Investment Counseling and Research, August 2007; Goldman Sachs, *The Case for Commodities as an Asset Class* (PowerPoint presentation), June 2004.

increasing demand and prices for certain commodity products.”<sup>152</sup> Greer also identified the negative correlation between commodity index returns and the returns from stocks and bonds as a key benefit of adding a diversified commodity index to a diversified portfolio.

In 2004, Professors Gary Gorton of the University of Pennsylvania and K. Geert Rouwenhorst of the Yale School of Management published what would become an oft-cited analysis showing how an investment in a broadly diversified commodity index would have brought positive returns over the 45-year period from 1959 to 2004. Gorton and Rouwenhorst found:

“Fully-collateralized commodity futures have historically offered the same return [for the same level of risk] as equities. While the risk premium on commodity futures is essentially the same as equities, commodity futures returns are negatively correlated with equity returns and bond returns. ... In addition, commodity futures are positively correlated with inflation, unexpected inflation, and changes in expected inflation.”<sup>153</sup>

Gorton and Rouwenhorst pointed out that the returns from an investment in a basket of commodity futures would not result from an increase in the spot prices of the commodities, but rather from the structure of the futures market and the benefits of diversification.<sup>154</sup> Discussing the benefits of diversification provided by adding commodity index instruments to a portfolio of stocks and bonds, Gorton and Rouwenhorst wrote: “It seems that the diversification benefits of Commodity Futures work well when they are needed most. Consistent with a negative correlation,

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<sup>152</sup> Greer, at p. 45.

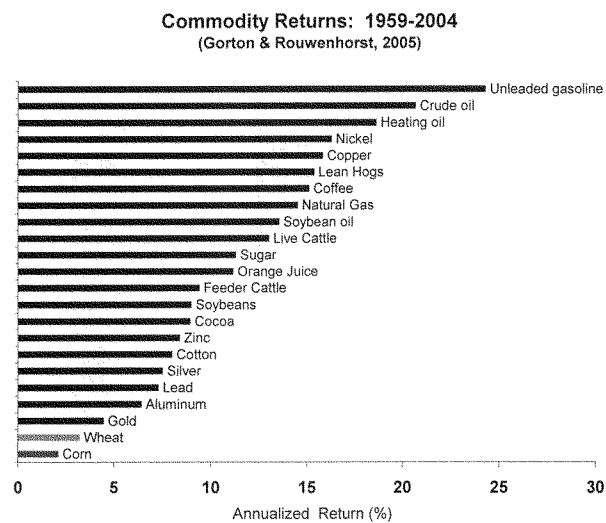
<sup>153</sup> Gary Gorton and K. Geert Rouwenhorst, *Facts and Fantasies About Commodity Futures*, Yale International Center for Finance, Yale ICF Working Paper No. 04-20, February 28, 2005, at p. 1.

<sup>154</sup> The authors contended that because the futures market reflected expectations about future spot prices, “expected movements in the spot price are not a source of return to an investor in futures. . . . Unexpected deviations from the expected future spot price are by definition unpredictable, and should average out to zero over time for an investor in futures, unless the investor has an ability to time the market.” *Id.*, at p. 3. The returns from an investment in futures, they stated, comes from an inherent “risk premium” that exists in the futures market that hedgers must pay to speculators in order for speculators to assume price risks from the hedgers. They cite Keynes’s theory of “normal backwardation,” despite the acknowledged “lack of success” in finding empirical evidence for any such inherent risk premium in the futures market. *Id.*, at p. 4.



Commodity Futures earn above average returns when stocks earn below average returns.”<sup>155</sup>

Gorton and Rouwenhorst analyzed how a number of individual commodities included in the Goldman Sachs Commodity Index (GSCI) performed between 1959 and 2004.<sup>156</sup> Figure 21 presents this data, in order of descending return. Wheat and corn provided the lowest returns of all the commodities studied.



**Figure 21.** Gorton & Rouwenhorst's calculations of annualized monthly arithmetic commodity returns for commodities in the GSCI. Data source: *Facts and Fantasies About Commodity Futures*, Appendix 3.

Although commodity indexes had been in existence for a number of years, prior to the early 2000s, there was a relatively small amount of speculation tied to these indexes.<sup>157</sup> In the early 2000s, however, after the collapse of the internet bubble in the stock market and as the price of oil and other energy commodities began a steep rise, investors began to look to commodities as an alternative investment. The Gorton and Rouwenhorst paper was influential in establishing commodity indexes as

<sup>155</sup> *Id.*, at p. 14.

<sup>156</sup> For commodities that were not traded during the entire period, data was used for as long as it was available.

<sup>157</sup> Goldman Sachs, *The Case for Commodities as an Asset Class*, at p. 2.

an additional way for hedge funds, pension funds, and other institutional investors to diversify their portfolios and benefit from the rising prices of oil and other commodities.

During the mid-2000s, a number of financial institutions – many of whom had created indexes or sold products related to those indexes – made strong recommendations for investors to purchase commodity index instruments. For example, Goldman Sachs, creator of the GSCI, stated: “GS recommends a permanent strategic holding in commodities as a ‘separate asset class’ to hedge macroeconomic risk, decrease expected portfolio risk and increase expected portfolio returns.”<sup>158</sup> Goldman Sachs listed the following benefits of investing in GSCI:

- “Commodities are significantly negatively correlated with both Bonds and Equities. . . .
- The GSCI historically has had high equity-like returns (12.24% per annum since 1970 as of May 31, 2004).
- Commodities perform best when other assets perform worst. . . .
- The GSCI provides a hedge against rising inflation. . . .”<sup>159</sup>

Alternative Investment Analytics, a consultant to Prudential Bache Commodities which constructed and publishes the Bache Commodity Index (BCI), made similar claims for purchasing commodity indexes:

- “Certain real assets, such as the BCI commodity index, may serve as a hedge against inflation risk.
- Exposure to commodities adds meaningful risk reduction and return enhancement. For the real asset portfolios considered, the BCI typically demanded a 10-25% allocation.
- Commodities exposure via a passive futures based index has the additional virtue that is perhaps the most liquid of real assets, with the possible exception of TIPS [Treasury Inflation-Protected Securities].”<sup>160</sup>

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<sup>158</sup> *Id.*, at p. 10.

<sup>159</sup> *Id.*, at p. 10.

<sup>160</sup> Alternative Investment Analytics, Real Assets in Institutional Portfolios: The Role of Commodities, Current Update: December 10, 2007, at p. 11.

In 2006, a study commissioned by PIMCO on the performance of commodity indexes stated: “Our historical analysis supports the claims that commodities have low correlations to traditional stocks and bonds, produce high returns, hedge against inflation, and provide diversification through superior returns when they are needed most.”<sup>161</sup> The PIMCO study was extremely enthusiastic about these types of investments, going so far as to suggest it required absolutely no skill to benefit from commodity indexes:

“More importantly, we believe commodities offer an inherent or natural return that is not conditioned on skill. Coupling this with the fact that commodities are the basic ingredients that build society, we believe commodities are a unique asset class and should be treated as such.”<sup>162</sup>

As a result of these articles, presentations, and soaring commodity prices, the total value of commodity index funds grew exponentially. One market analyst estimated that the total value of investments in commodity index funds “jumped from \$15 billion in 2003 to \$56 billion in 2004 and on to \$80 billion” in 2006.<sup>163</sup> As of mid-2008, the CFTC has estimated that the total value of commodity index investments had reached \$200 billion.

## 2. Critical Analyses of Index Instruments

Not all market analysts were so enthusiastic. In 2006, a number of articles appeared that took issue with the assertion that buying and holding commodity index instruments provided superior returns and benefits. These articles indicated that purchases of commodity index instruments were, in essence, speculative bets on the structure of the commodities futures markets rather than a risk-free technique for portfolio diversification.

The issues raised in these analyses, along with declines in the performance of many commodity indexes in 2005 and 2006, led a number of financial institutions to devise new indexes. Whereas earlier, or first-generation, commodity indexes typically relied on the second

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<sup>161</sup> PIMCO study, at p. ii.

<sup>162</sup> *Id.*, p. 4.

<sup>163</sup> Philip Verleger, *Commodity Investors: A Stabilizing Force?*, *The Petroleum Economics Monthly*, March, 2006. This and other estimates of a similar magnitude reflect both the growth in actual amounts invested in commodity indexes and the appreciation in value of those investments due to increasing commodity prices.

month futures contract to calculate the index, these later indexes generally began to use longer dated futures contracts.

Since 2006, these second-generation commodity indexes have become increasingly popular. Although there is no publicly available data on the relative amounts held in instruments linked to second-generation and first-generation indexes, persons interviewed by the Subcommittee estimated that virtually all new commodity index investments are now placed in second-generation index instruments, and that, in the aggregate, investments in second generation indexes now represent more than half of all commodity index investments.

The shift into second-generation indexes is significant for the futures markets for several reasons. First, it means that instead of hedging their swap exposures with purchases of second month futures contracts, many swap dealers now need to hedge their commodity index swap sales with purchases of futures contracts whose expiration dates are more distant in time. Second, commodity index rolls now require sales and purchases of futures contracts that are farther apart in time, as opposed to just between the first and second month contracts used in most first-generation indexes. These changes mean that the effect of commodity index trading on the futures markets is not limited to the first two futures contracts, but now extends months longer to futures contracts that are much farther from expiration.

One of the first major analyses challenging the rosy view of the performance of commodity indexes was published in January 2006, by Claude Erb and Campbell Harvey. Erb and Harvey analyzed the returns from the commodities used to support the 2004 Gorton and Rouwenhorst analysis.<sup>164</sup> Erb and Harvey found that an investment in any of these commodity futures did not provide a return greater than the rate of inflation. They wrote: “[T]he average return of the average commodity futures was not statistically different from zero.”<sup>165</sup> Erb and Harvey concluded that although the large returns cited by Gorton and Rouwenhorst were real, they did not result from any significant appreciation in the price of the commodities within the index, but rather

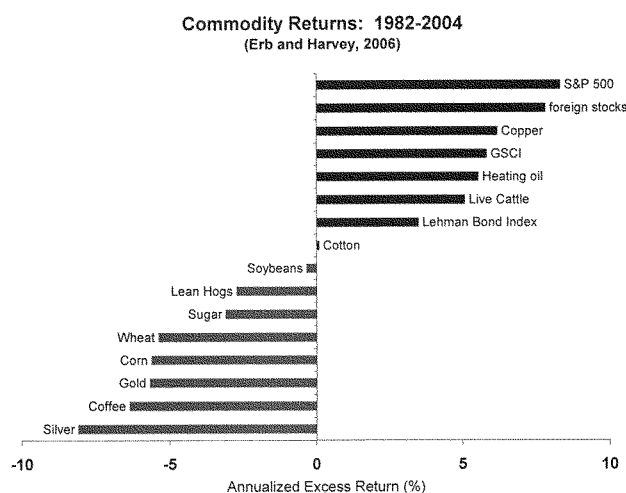
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<sup>164</sup> Claude R. Erb and Campbell R. Harvey, *The Tactical and Strategic Value of Commodity Futures*, January 12, 2006. Erb and Harvey’s paper referenced and expanded upon previous research into the nature of commodity index and commodity futures returns. See, e.g., Hilary Till, *Two Types of Systematic Returns Available in the Commodity Futures Markets*, *Commodities Now*, September 2000, and references cited therein.

<sup>165</sup> *Id.*, at p. 4.

the returns resulted from the periodic rebalancing of the commodity futures within the index and from the fact that the performance of these individual commodity futures contracts were uncorrelated with each other.<sup>166</sup>

The Erb and Harvey analysis found that, from 1982 to 2004, agricultural commodities and precious metals were the worst performing commodity sectors, while energy was the best performing sector. Wheat, corn, gold, and silver all had negative returns.<sup>167</sup> The returns computed by Erb and Harvey are shown in Figure 22.



**Figure 22.** Annualized excess returns (geometric mean) for selected commodities in the GSCI and various benchmarks. Data source: Erb and Harvey, at p. 15.

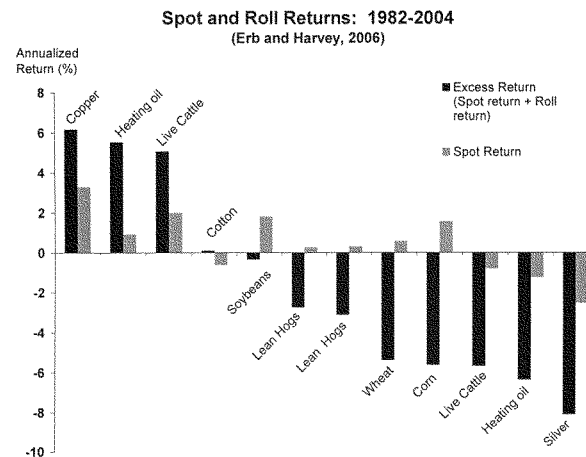
After examining why these commodities performed differently over the time period studied, Erb and Harvey found that one of the key factors determining the performance of a commodity within the index was the structure of the market – specifically, whether the futures contracts further from expiration were priced higher than the futures

<sup>166</sup> Having uncorrelated commodity futures provides a so-called “diversification return” that does not boost the return of an individual commodity, but rather the portfolio as a whole. “Campbell (2000) calls portfolio diversification the one ‘free lunch’ in finance because it allows an investor to reduce a portfolio’s standard deviation of return without reducing the portfolio’s arithmetic return.” *Id.*, at p. 36.

<sup>167</sup> Erb and Harvey represented returns in terms of the excess returns, i.e., the returns over the risk-free rate of return.

prices nearer expiration (a carry market or contango) or lower than the futures prices nearer expiration (an inverse market or backwardation). As previously explained, the roll return from an index-related investment will be negative in a carry or contango market and will be positive in an inverse or backwardated market.

Figure 23 shows how both the roll return and spot return contributed to the performance of the commodities studied by Erb and Harvey. The data shows that the roll return was the primary determinant of returns, or lack of returns, for all of the commodities studied. For grains in particular – wheat and corn – the small positive spot returns were swamped by large negative roll returns. In other words, despite gains in the price of these commodities, investments in these commodities produced significant losses due to the need to regularly sell the expiring first month futures contracts and purchase more expensive second month futures contracts. This data demonstrates the significance of the roll return and structure of the commodity futures market for long-term investments in commodity futures contracts or index-related instruments.



**Figure 23.** Spot and roll returns for selected commodities. Returns reflect annualized returns (geometric mean). Data source: Erb and Harvey, p. 15.

Erb and Harvey cautioned that commodity prices in the past could not be relied upon to predict future price trends. “In reality, investors do not know what the average term structure of prices will look like in the future. As a result, knowing that roll returns have been an important driver of past returns provides no insight as to the future level of roll

returns.”<sup>168</sup> This view stands in direct contrast to other analyses, such as the PIMCO study, that contend commodity indexes offer “an inherent or natural return that is not conditioned on skill.” “Bottom line,” Erb and Harvey wrote, “forward looking expected returns for commodity futures (as well as for stocks, bonds, hedge funds, anything) are just bets. The commodity futures bet has one really high confidence element, the diversification return, and two very uncertain elements, spot and roll returns.”<sup>169</sup>

Independently, another study released in early 2006, by economists Barry Feldman and Hilary Till, arrived at a similar conclusion. Feldman and Till examined how an instrument linked to a commodity index based on wheat, corn, and soybeans futures contracts would have fared over a much longer period of time, from 1950 to 2004.<sup>170</sup> Figure 24 presents this data on the commodity index returns in each five-year window within this 54-year period. The majority of returns for these commodities during the five-year intervals within this period were negative.<sup>171</sup> Only during one five-year period from 1970-74, a time when many agriculture commodity prices spiked higher due to a confluence of extraordinary geopolitical and market conditions, did all three commodities provide large positive returns.<sup>172</sup> Like Erb and Harvey, Feldman and Till found that, for most of the 54 years, the negative roll returns overwhelmed the positive appreciation in wheat and corn prices.

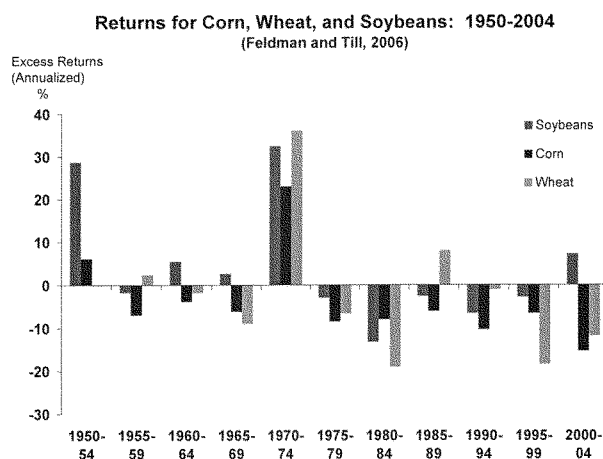
<sup>168</sup> Erb and Harvey, p. 25.

<sup>169</sup> *Id.*, at p. 46.

<sup>170</sup> Barry Feldman and Hilary Till, *Separating the Wheat from the Chaff: Backwardation as the Long-Term Driver of Commodity Futures Performance; Evidence from Soy, Corn and Wheat Futures from 1950 to 2004*, EDHEC Risk and Asset Management Research Centre, March 2006.

<sup>171</sup> For the entire period, the annualized excess return for corn was -4.35% and for wheat was -2.91%, compared to a positive annualized return for the S&P 500 of 6.80%. Soybeans managed to show an overall return of 3.41%, largely due to the returns for soybeans provided from just two of these five-year periods, 1950-54 and 1970-74. *Id.*, at p. 11.

<sup>172</sup> A number of factors led to the rapid and general increase in agricultural commodity prices in the early 1970s. Adverse weather conditions reduced the yields in major grain-producing countries, including the United States, Australia, Canada, and the Soviet Union. In 1972, the Soviet Union turned to the United States and other world markets to make up for a significant decline in their domestic wheat production. Increased demand for grain by the Soviets and other communist countries resulted in a 29% increase in global exports of grain between 1971 and 1972. The United States abandoned the gold standard in 1971 and the subsequent depreciation of the value of the U.S. dollar also boosted the demand for exports. Demand for soybean meal as a source of high-protein feedstock soared after the failure of the Peruvian anchovy catch, and soybean prices skyrocketed in 1973 and 1974. The stocks of surplus grain in the United States and other grain-producing countries had fallen due to the phase-out of various subsidies in the late 1960s. After this period, prices did not return to their previous levels. See May Peters, Suchada Langley, Paul Westcott, *Agricultural Commodity Price Spikes in the 1970s and 1990s, Valuable Lessons for Today*, USDA Economic Research Service, Amber Waves, March 2009.

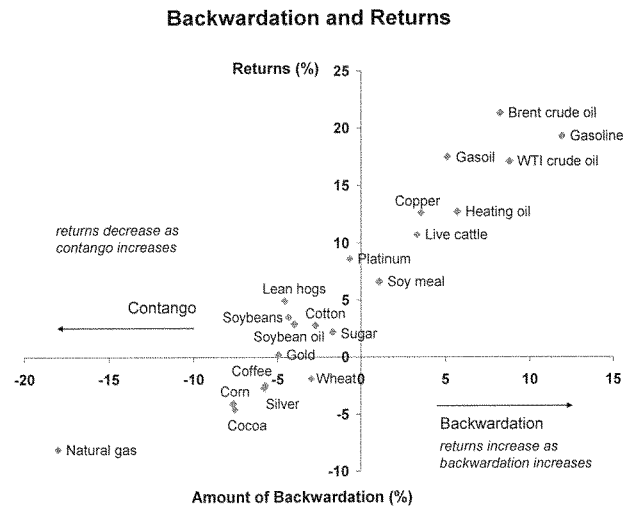


**Figure 24.** Excess returns (spot + roll) for wheat, corn, and soybeans over five-year periods from 1950-2004. Data source: Feldman and Till (2006), at pp. 33-34.

The negative roll returns, Feldman and Till wrote, were primarily due to the structure of the agriculture futures markets over the 54-year period – specifically, that successive futures contracts tend to increase in price (contango) in order to provide a financial incentive to store the commodity over time. Wheat and corn, Feldman and Till found, “are consistently in contango,” and therefore provided negative returns over the period.<sup>173</sup>

<sup>173</sup> With respect to the length of time required for the roll return to predominate, Till found the roll yield explained 25% of the variation in futures returns over one-year time horizons, 40% of the variation over two-year time horizons, 67% of the variation over a five-year time horizon, and 73% of the variation over an eight-year horizon. *Id.*, at p. 15. See also, Barry Feldman and Hilary Till, *Backwardation and Commodity Futures Performance: Evidence from Evolving Agricultural Markets*, Journal of Alternative Investment, Winter 2000; Hilary Till, *Trading strategies, commodity risk*, May 2007.





**Figure 25.** The degree of backwardation is the most important factor determining returns over long time periods. Source: Morgan Stanley, 2005.

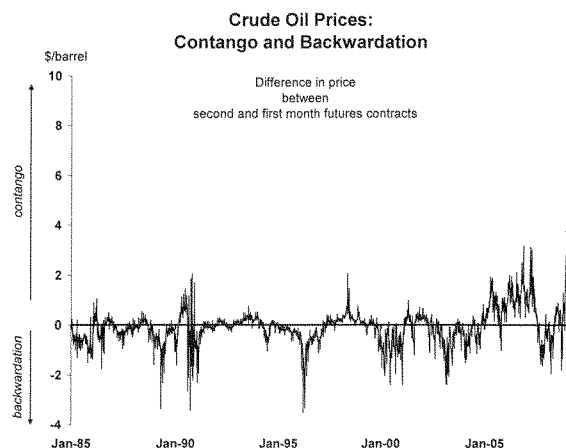
In a related study released in April 2006, Till extended these findings to all commodities. “Over *very* long timeframes a number of authors have shown how the term structure of a commodity futures curve has been the dominant driver of returns in futures investing. In other words, trends in the spot price of a commodity generally have *not* been a meaningful driver of returns over long periods of time.”<sup>174</sup> These results are shown in Figure 25, which reflects data from Till’s paper.<sup>175</sup> A recent commentary by Standard & Poor’s sums up this body of research succinctly: “In commodity indexing, it is important to

<sup>174</sup> Hilary Till, *Structural Sources of Return and Risk in Commodity Futures Investments*, EDHEC Risk and Asset Management Research Centre, April 2006, at p. 7 (emphasis in original).

<sup>175</sup> The data used in Figure 25 is from a presentation by Nash and Strayer of Morgan Stanley, which was also reproduced in Till’s paper. Morgan Stanley, IQPC, *Investing in Commodities*, May 2005, at p. 2, 4. Morgan Stanley analyzed the performance of these commodities over two different time periods, a 10-year period from 1994 to 2004, and a 21-year period from 1984 to 2004. The results were similar, finding that spot price changes over both time frames had “very little effect” on the overall performance of the commodities in the index. The Morgan Stanley analysis also concluded that the extent to which prices fell over time (backwardation) in the futures market was the main factor that determined the amount of returns: “The persistence of backwardation is a driver for commodity returns.” For the period from April 1984 to September 2004, they found the correlation between backwardation and returns was 0.94 ( $R^2=0.88$ ), demonstrating a strong statistical relationship.

remember two key things, contango is bad and backwardation is good.”  
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The importance of the structure of the futures market on commodity index returns became apparent to many in late 2006. In 2004, the structure of the futures market for crude oil – the most heavily weighted commodity in most indexes – changed. The price of longer-term futures contracts rose from below the price of shorter-term futures contracts (backwardation) to where they were now above the price of the shorter-term futures contracts (contango). By 2006, the price of the second month futures contract was consistently more than \$1 per barrel greater than the price of the first month futures contract, which was an unprecedented degree of contango.<sup>177</sup> (Figure 26).



**Figure 26.** A high degree of contango has characterized the crude oil futures market since 2004. Data source: Energy Information Administration.

This change in the structure of the oil futures market had a devastating effect on the returns of the broad-based commodity indexes

<sup>176</sup> Standard & Poor's, *Commodity Perspective*, S&P GSCI, February 2009, at p. 2.

<sup>177</sup> At the same time prices were rising, inventories were full. The Subcommittee released a 2006 Report, *The Role of Market Speculation in Rising Oil and Gas Prices: A Need to Put the Cop Back on the Beat*, which concluded that the anomalous situation of high prices despite high inventories was the result of the large influx of index-related investments into the futures markets, which increased the price of more distant contracts relative to the nearer ones. "The large influx of speculative investment into oil futures has led to a situation where we have high crude oil prices despite high levels of oil in inventory." *Id.*, at p. 3.

during 2006. The return on the DJ-AIG energy sub-index, for example, fell from a positive 42% in 2005, to a negative 41% in 2006, and helped drag down the overall performance of the broad-based DJ-AIG commodity index from a positive 21% in 2005, to a paltry 2% in 2006, despite overall rising oil prices.<sup>178</sup>

The large losses caused by increasing oil futures prices led some analysts to openly ridicule commodity index investments. For example, in a 2006 posting on his “Efficient Frontier” website, analyst William J. Bernstein observed that the huge popularity of commodity index investments as protection against inflation had, in effect, undermined the ability of the market to provide that protection.<sup>179</sup> Bernstein argued that the commodity markets were no longer dominated by hedgers, but rather by speculators. He contended that, in such a market, it was unrealistic to expect to earn a premium from long-term futures when everyone was trying to do the same: “Nothing makes a premium disappear faster than tout le monde chasing after it.”<sup>180</sup> Bernstein left his readers with the following advice: “The next time someone tries to sell you a commodities fund based on the Goldman Sachs Commodities Index, smile and say, ‘Sorry, but I’m from Earth, and you’re from planet *I Love Lucy*. Let’s revisit this discussion in an alternate universe.’”<sup>181</sup>

To counteract the losses from the monthly roll of contracts that result from a futures market that is in contango, various financial institutions developed second-generation commodity indexes and strategies to minimize the potential losses from the roll. Generally, these second-generation indexes and strategies replaced the second month futures contracts used to compute the value of the index with more distant futures contracts so that they would have to roll them less frequently. Some index providers also constructed a roll methodology that selected the futures contract to be included based upon a

<sup>178</sup> The natural gas, livestock, and metals sub-indexes also had negative returns in 2006. Dow Jones-AIG Commodity Indexes, Periodic table of returns, at [http://www.djindexes.com/mdsidx/downloads/aig/AIG\\_Comm\\_Per\\_table.pdf](http://www.djindexes.com/mdsidx/downloads/aig/AIG_Comm_Per_table.pdf).

<sup>179</sup> William J. Bernstein, *On Stuff, Efficient Frontier*, September 2006, at <http://www.efficientfrontier.com/ef/0adhoc/stuff.htm>.

<sup>180</sup> *Id.*

<sup>181</sup> Bernstein criticized Gorton and Rouwenhorst for relying on a model of the market in which hedgers outnumbered speculators. According to Bernstein, this model may have reflected the composition of the market several decades ago, but no longer accurately depicted the modern commodities markets, in which the largest traders were hedge funds, institutional investors, and swap dealers. *Id.*

mathematical calculation as to which futures contract would provide the best roll return.

Deutsche Bank was one of the first institutions to offer a second-generation commodity index.<sup>182</sup> It explained that the negative roll return from the oil market was the primary reason for the new index:

“We have noted for some time that the engine room of performance in a commodity index has traditionally derived from the positive roll yield generated in the energy sector due to the tendency of forward curves in this part of the commodity complex to be downward sloping. However, the appearance of contango in the crude oil term structure over the past two years has meant the benefits of rolling down the curve and a positive roll yield have disappeared and have been replaced by a rolling up the curve and picking up a negative roll yield.”<sup>183</sup>

Deutsche Bank announced that the new index was designed to maximize roll return: “Rather than select the new future based on a pre-defined schedule . . . the index rolls to that future which generates the maximum implied roll yield from the list of tradable futures which expire in the next thirteen months.”

Other financial firms, including Goldman Sachs, Morningstar, Prudential Bache, and UBS-Bloomberg, also developed second-generation commodity indexes designed to avoid potentially negative roll returns. Although they differ in specific roll and contract selection methodologies, they all select longer-dated futures contracts for inclusion within the index, and they all roll less frequently than the traditional indexes.<sup>184</sup>

<sup>182</sup> Deutsche Bank, *DBLCI-OY: Technology To Tackle Term Structure Dynamics*, June 2, 2006; *DB Commodity Index Tracking Fund Announces Plans to Fight Contango*, Business Wire, May 24, 2006; Deutsche Bank, *DBIQ Index Guide*, *DBLCI Optimum Yield Commodity Indices*, March 6, 2008.

<sup>183</sup> *DBLCI-OY: Technology To Tackle Term Structure Dynamics*.

<sup>184</sup> The Goldman Sachs Enhanced Commodity strategy, for example, rolls into more distant futures contracts for crude oil when oil futures prices climb more quickly (move into a steeper contango). For other commodities, such as natural gas, Chicago wheat, and corn, the strategy claims to target futures contracts for only a few specified months to take advantage of historical and structural futures curves for those commodities. Goldman, Sachs & Co., Prospectus Supplement dated July 27, 2007, GS Connect S&P GSCI Enhanced Commodity Total Return Strategy Index ETN. The Bache Commodity Index (BCI) also holds futures contracts that are of longer maturity than in the traditional indexes. Alternative Investment Analytics, *The Bache Commodity Index: A Factor-Based Approach to Commodity Investment*, AIA Research Report, revised August 2008. The Morningstar Long/Short Commodity Index employs a “momentum based” strategy to select commodity futures based on the recent performance of the commodity, including its futures curve (i.e., the degree of market contango or backwardation). Paul D.

The increasing amount of speculative investments in second-generation index instruments, which some traders estimate now constitutes more than half of all commodity index investments, has significant implications for the futures markets. Unlike first-generation indexes which generally track the price of second month futures contracts for a commodity, second-generation indexes track more distant futures contracts. Traditionally, there has been a significantly lesser amount of trading in longer-dated contracts than in second month contracts. The impact of speculative investments in second-generation index instruments on the prices of these longer-dated futures contracts is likely to be at least as significant as the impact of first-generation index investments on the prices of second month futures contracts.<sup>185</sup> This impact can be seen in the analysis in Section V, which shows that spreads between longer-dated futures contracts for Chicago wheat have increased.

#### **F. Exemptions from Speculative Position Limits for Commodity Index Trading**

The ability of index traders to purchase futures contracts for agricultural commodities has been facilitated by the CFTC's decision not to apply the standard position limits on how many futures contracts that a single trader may hold for agricultural commodities to swap dealers, ETF managers, and ETN issuers.<sup>186</sup> If each swap dealer, ETF

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Kaplan, *Beyond Beta – Passive Alternatives to Active Commodities Strategies*, Morningstar, 2007. The UBS Bloomberg Constant Maturity Commodity Index (CMCI) allows investors to select the particular commodity sectors and specific maturities of the futures contracts they wish to hold – such as contracts with expiration dates 3 months, 6 months, and between 1 and 3 years into the future. It also promises continuous rolling of these contracts on a daily basis to maintain contracts of these maturities within the portfolio. UBS Bloomberg CMCI Commodity Investments, Presentation of Index, at <http://www.ubs.com/4/investch/cmci/ubs-cmci-i-en.html>.

From the limited performance data of these second-generation index funds that is publicly available, it appears that, like their first generation counterparts, their returns are driven primarily by the energy and metals sectors. At best, agricultural commodities contribute only small additional returns. For grains like wheat and corn, where storage is readily available and increasing futures prices (contango) are persistent, the net spot and roll returns will most likely be negative, even with more complex roll strategies. As long as futures prices are increasing (in contango), the roll return will likely be negative, no matter which futures contracts are selected and no matter which roll strategy is employed.

<sup>185</sup> The CFTC Supplemental Commitment of Index Traders Report provides only the total amount of open interest across all futures contracts for a particular commodity from index trading; it does not provide data on which particular future contracts are held. Such a breakdown would provide valuable data to assist in the evaluation of the impact of index trading on the futures markets.

<sup>186</sup> The leading commodity indexes reference futures contracts in the agricultural, energy, and metals sectors. Agricultural position limits are established by the CFTC and enforced by the regulated commodity exchanges. In contrast, position limits for non-agricultural commodities such as energy and metals are established by the exchanges themselves under guidance issued by

manager, and ETN issuer had been restricted to holding no more than the standard limit of 6,500 wheat futures contracts at any given time under the CFTC's existing wheat position limit, for example, it is likely that, together, they would have purchased and held fewer wheat contracts (open interest) on the futures exchanges than they actually did.<sup>187</sup>

As explained earlier, the fundamental purpose of position limits is to prevent excessive speculation from causing "sudden or unreasonable fluctuations or unwarranted changes" in the prices of commodities traded on futures exchanges. The Commodity Exchange Act requires the CFTC to impose such position limits to prevent excessive speculation, but also states that the position limits are not to be applied to activities determined by the CFTC to constitute "bona fide hedging transactions or positions." For many years, the CFTC interpreted the term "bona fide hedging" to require that the transactions sought to be hedged were in the cash market for the commodity. In 1986, the Congress encouraged the CFTC to expand the exemption to allow other types of risk-management transactions, so long as the expansion was consistent with the CFTC's basic mission to prevent excessive speculation from causing price distortions on the futures exchanges.

The key issue for the CFTC then became whether, and if so how, to extend the hedge exemption, which had traditionally been applied to commercial firms hedging to physical holdings of a commodity, to

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the CFTC. The exchanges may also be required to establish accountability levels which do not restrict the number of contracts that a trader may hold, but trigger additional review of contracts that exceed the specified levels. For more information on accountability levels, see the Subcommittee's Report, *Excessive Speculation in the Natural Gas Market* (2007), at pp. 51-52. Because the exchanges establish and apply non-agricultural position limits, swap dealers, ETF managers, and ETN issuers do not need to apply to the CFTC for exemptions related to those commodities.

<sup>187</sup> The information available to the Subcommittee indicates the maximum number of wheat futures contracts that these dealers and funds may hold; it does not indicate how many futures contracts they actually do hold. If each swap dealer were restricted to holding no more than 6,500 wheat futures contracts at any given time, these swap dealers would have had to find another way to offset their financial exposure to the commodity index swaps they sold, or to assume the outright price risks from those swaps. Due to the high volatility in the commodity markets, it is unlikely that swap dealers would have been willing to assume the outright price risks. In addition, since the over-the-counter market (OTC) for swaps in agricultural commodities is less extensive than the OTC market for energy commodities, it would have been difficult for swap dealers to find the requisite offsets in the OTC market. The most likely scenario is that, absent exemption from limits restricting the number of contracts they could hold, swap dealers would have been unlikely to offer the volume of swaps that were offered over the past few years. On the other hand, it is possible that the OTC market for agricultural swaps is larger and has more liquidity than current data suggests, since available data is limited. Traders have told the Subcommittee that the OTC market for agricultural swaps has recently begun expanding.

traders such as swap dealers who were using the futures market to hedge their exposure to financial instruments rather than actual physical commodities.

**Exemptions Granted to Date.** According to data provided by the CFTC to the Subcommittee, since 2005, the CFTC has issued hedge exemptions to four swap dealers for their holdings of wheat futures contracts on the CME. Those exemptions permit the swap dealers to hold up to 10,000, 17,500, 26,000, and 53,000 wheat futures contracts, respectively, to hedge their exposures to wheat swaps tied to commodity indexes.<sup>188</sup> In addition, in 2006, the CFTC staff issued two “no-action” letters permitting two ETF managers to hold up to 11,000 wheat futures contracts each in a single month and, in the case of one of the ETFs, to hold a total of 13,000 wheat futures contracts in all months combined.<sup>189</sup> Together, these no-action letters and the hedge exemptions granted by the CFTC permit six index traders to hold a total of up to almost 130,000 wheat futures contracts in any single month and in all months combined. Absent the hedge exemptions and no-action relief, these six index traders would have been limited to a total of 39,000 wheat futures contracts at a time, or less than one-third of the contracts that they are now permitted to hold.

CFTC data indicates that, from 2006 to mid-2008, the total number of outstanding contracts (long open interest) attributable to commodity index traders was about 200,000 contracts. That means that the six traders using the hedge exemptions and no-action letters issued by the CFTC may have held as much as 60% of the long open interest in Chicago wheat futures contracts attributable to index traders.<sup>190</sup>

**Hedge Exemption.** As explained earlier, the hedge exemption is tied by statute to “bona fide hedging transactions or positions.” It was designed to permit producers, merchants, and end users of commodities

<sup>188</sup> See Exhibits 1-4. In Exhibit 4, which provides the hedge exemption for up to 17,500 contracts, the CFTC states that the granting of the request for the exemption reflects an increase from a previously granted hedge exemption. Exhibit 5 contains an exemption for an index trader on the Kansas City Board of Trade. Each of the exemptions and no-action letters described in this portion of the Report allowed purchases of wheat futures contracts on the Chicago Mercantile Exchange; in some instances, the CFTC also authorized additional, though much smaller, purchases of wheat futures contracts on the Kansas City Board of Trade.

<sup>189</sup> See Exhibits 6 and 7.

<sup>190</sup> Additional research is needed to determine who holds the remaining 70,000 futures contracts linked to commodity indexes, how many of those contracts are attributable to each such trader, and what role, if any, is being played by CFTC position limits, exemptions, and no-action letters.

to hedge their legitimate anticipated business needs by purchasing futures contracts on commodity exchanges.

Longstanding CFTC regulations define bona fide hedges as transactions that “normally represent a substitute for transactions to be made or position to be taken at a later time in a physical marketing channel, and where they are economically appropriate to the reduction of risks in the conduct and management of a commercial enterprise.”

In 1986, Congress encouraged the CFTC to consider expanding the hedge exemption to include firms that were using the futures market to manage risks arising from a portfolio of financial investments. The next year, in 1987, the CFTC issued a statement that expanded its definition of bona fide hedge transactions as requested. The CFTC stated that “various users and potential users of financial futures” had expressed concern that the link to transactions in the physical commodity markets is “overly restrictive and precludes the classification as hedging of numerous strategies that are otherwise risk reducing.”<sup>191</sup> The CFTC then explained that the definition should not be construed to apply only to firms using futures contracts to reduce their exposure to risks in the cash market. It stated that the Commission’s original intent in promulgating the definition of a bona fide hedge was “to provide a general definition ‘to describe the broad scope of risk-shifting transactions which may be possible in the diverse types of futures contracts now under regulation.’”<sup>192</sup> The CFTC concluded that to qualify as a bona fide hedge, a transaction in the futures market did not need to be a temporary substitute for a later transaction in the cash market, but also included “all balance sheet and other trading strategies that are risk reducing and otherwise consistent with this interpretation.”<sup>193</sup>

Several months later, the CFTC issued a new “interpretation” of its definition of bona fide hedge transactions to permit exchanges to

<sup>191</sup> CFTC, *Clarification of Certain Aspects of the Hedging Definition*, 52 Fed. Reg. 27195 (July 20, 1987). During the consideration of the Futures Trading Act of 1986, both the House and Senate Agriculture Committees had directed the CFTC to review the definition of bona fide hedge to ensure that it reflected the new and evolving use of financial futures. CFTC, *Risk Management Exemptions From Speculative Position Limits Approved Under Commission Regulation 1.61*, 52 Fed. Reg. 34633 (September 14, 1987). For additional background on this issue, see also CFTC Staff Report on Commodity Swap Dealers and Index Traders with Commission Recommendations, at pp. 13-15.

<sup>192</sup> *Id.*

<sup>193</sup> *Id.*



grant hedge exemptions for various risk management transactions. The CFTC stated that “the exemption of certain risk-management positions from exchange speculative limits would be consistent with the objectives” of the hedge exemption. The CFTC explained that it adopted this broader view of the hedge exemption so that “any futures or option positions involved in such risk reducing strategies currently would be eligible for exemption from exchange speculative limits pursuant to exchange rules.”<sup>194</sup>

The CFTC specified that such exemptions be granted on a case-by-case basis, subject to a demonstrated request and showing by the applicant of the need for the exemption. The CFTC also required that applicants for such “risk management exemptions” be “typically engaged in buying, selling or holding cash market instruments.” Additionally, the CFTC required the exchanges to monitor the exemptions it granted to ensure that any positions held under the exemption did not result in any large futures or options position that could disrupt the relevant futures market.

In 1991, the CFTC granted the first exemption from its speculative position limits to a swap dealer seeking to hedge its exposure to a commodity index swap which it had sold to a pension fund.<sup>195</sup> The CFTC later described the swap and resulting hedge exemption as follows:

“The swap transaction allowed the pension fund to add commodities exposure to its portfolio indirectly, through the OTC trade with the swap dealer – something it could have done directly, but only in a limited fashion.

“The pension fund would have been limited in its ability to take on this commodities exposure directly, by putting on the long futures position itself, because the pension fund – having no offsetting price risk incidental to commercial cash or spot operations – would not have qualified for a hedge exemption with respect to the position.”<sup>196</sup>

Since setting this precedent, the CFTC has granted three additional hedge exemptions to swap dealers seeking to offset their exposures to

<sup>194</sup> CFTC, *Risk Management Exemptions From Speculative Position Limits Approved Under Commission Regulation 1.61*, 52 Fed. Reg. 34633 (September 14, 1987).

<sup>195</sup> CFTC Staff Report on *Commodity Swap Dealers*, at p. 14. In this instance, the commodities constituting the index included wheat, corn, and soybeans.

<sup>196</sup> *Id.*, at p. 15.

individual commodities or commodity indexes. The CFTC has stated that these hedge exemptions “were all subject to specific limitations to protect the marketplace from potential ill effects.”<sup>197</sup> Those limitations included that: (1) the futures positions must offset specific price risks; (2) the dollar value of the futures positions must be no greater than the dollar value of the underlying risk; and (3) futures positions could not be held into the month of contract expiration.

**“No-Action” Letter Exemptions.** Although the CFTC has granted several hedge exemptions to swap dealers, it has determined that it is not appropriate to grant such exemptions to exchange traded funds (ETFs) for the commodity futures held by the ETFs. As described previously, the manager of an ETF does not hold futures to offset price risks, but rather holds futures contracts to ensure that the value of the fund matches the value of the shares in the fund that are traded on a stock exchange. Strictly speaking, therefore, the ETF manager is not holding these futures to offset a price risk or for risk management purposes.

Although the CFTC determined that the hedge exemption was unavailable to ETF managers, on two occasions the CFTC staff nevertheless determined it was appropriate to provide relief to ETFs from the position limits for agricultural commodities. In 2006, the CFTC staff issued a letter stating that it would not enforce the standard position limits with respect to Deutsche Bank’s operation of a commodity-related ETF. Later that year it provided similar relief to another firm, publicly identified by the CFTC only as “X,” managing what appears to be another ETF.<sup>198</sup>

In a “No-Action” letter dated May 5, 2006, the CFTC staff granted Deutsche Bank’s request that the CFTC refrain from taking enforcement action against the bank for violating the speculative position limits on wheat and corn futures, provided the bank held no more than 11,000 wheat contracts and 17,500 corn contracts in any one month.<sup>199</sup> In explaining why it granted the bank’s request, the CFTC noted five

<sup>197</sup> *Id.*

<sup>198</sup> See Exhibit 6, Letter from Richard A. Shilts, Director, Division of Market Oversight, to Mr. Michael Sackheim, Esq., Sidley Austin LLP, May 5, 2006 (CFTC letter No. 06-09), No-Action, Division of Market Oversight. See Exhibit 7, Letter from Richard A. Shilts, Director, Division of Market Oversight, to [redacted], September 6, 2006 (CFTC letter No. 06-19), No-Action, Division of Market Oversight. The CFTC did not state why it granted confidentiality to “X.”

<sup>199</sup> CFTC No-Action Letter No. 06-09.

factors: “The futures trading activity passively tracks a widely recognized commodity index”; the trading was leveraged; the fund itself did not have price exposure (the price exposure was passed onto the shareholders); the index and the fund were transparent; and the positions would not be carried into the spot month.

Several months later, the CFTC granted similar relief to “X.” It described X’s investment strategy, designated by the letter “P,” to be “a long-only, fully collateralized trading strategy.” Despite requiring Deutsche Bank to provide an index and investor fund that was “highly transparent,” the CFTC staff allowed X to operate without similar transparency, noting only X’s assertion that “X’s clients are provided with at least the level of disclosure and transparency described in your letter.” Despite the lack of transparency to other market participants, the CFTC staff allowed X to exceed the speculative position limits by an even greater amount than for Deutsche Bank’s transparent strategy.

Table 7 compares the levels of No-Action relief granted by the CFTC staff with the regulatory position limits applicable to other market participants.

**No-Action Relief Granted from Speculative Position Limits**

WHEAT	CFTC Speculative Position Limit	Limit for Deutsche Bank ETF	Limit on X for P Strategy
Spot Month	600	0	0
Single Month	3,000	11,000	11,000
All Months	6,500	11,000	13,000

CORN	CFTC Speculative Position Limit	Limit for Deutsche Bank ETF	Limit on X for P Strategy
Spot Month	600	0	0
Single Month	5,500	17,500	17,500
All Months	9,000	17,500	27,000

**Table 7.** Data source: CFTC.

**Proposed Risk Management Exemption.** In November 2007, the CFTC proposed to amend its regulations to create a new type of exemption from the standard position limits. Called a “risk management exemption,” it would permit ETF managers to apply for permission to

exceed established speculative position limits, rather than have to continue to rely upon No-Action letters.<sup>200</sup> The CFTC noted that the last substantive changes to its speculation position limits had been made in 1991, and “the intervening 16 years have seen significant changes in trading patterns and practices in derivatives markets.”<sup>201</sup>

The CFTC cited the emergence of commodity index trading, in particular, as a reason for creating the new exemption. In its proposal, the CFTC stated: “To the extent that a type of trading activity can be identified that is unlikely to cause sudden or unreasonable fluctuations or unwarranted changes in prices, it is a good candidate to qualify for an exemption from position limits.” The CFTC stated that commodity index trading had “characteristics that recommend it on that score,” including that index trading was passively managed, unleveraged, and diversified across many commodities.<sup>202</sup>

The CFTC notice reiterated the CFTC staff’s previous determination that ETF managers could not qualify for the hedge exemption as currently drafted, but also affirmed its belief that ETF managers should be able to qualify for exemptions from the speculative position limits:

“In the index fund positions described in the no-action letters, the price exposure results from a promise or obligation to track an index, rather than from holding an OTC swap position whose value is directly linked to the price of the index. The [CFTC staff] believed that this difference was significant enough that the index fund positions would not qualify for a hedge exemption. Nevertheless, because the index fund positions represented a legitimate and potentially useful investment strategy the Division granted the index funds no-action relief, subject to certain conditions, described below, that were intended to protect the futures markets from potential ill effects.”

The proposed risk management exemption would have allowed an exemption from speculative position limits for: (1) “intermediaries,

<sup>200</sup> CFTC, Notice of proposed rulemaking, Risk Management Exemption From Federal Speculative Position Limits, 72 Fed. Reg. 66097 (November 27, 2007).

<sup>201</sup> *Id.*

<sup>202</sup> The CFTC did not provide any empirical evidence or factual basis for this assertion. It is unclear why the CFTC believed passive investments could not cause unreasonable fluctuations or unwarranted changes in price, or why the fact of diversification across commodities lessened the impact upon any single commodity.

such as index funds, who pass price risks on to their customers; and (2) pension funds and other institutional investors seeking to diversify risks in portfolios by including an allocation to commodity exposure.”<sup>203</sup>

The proposed exemption was not finalized. In April 2008, largely in response to public outcry over rising prices for oil, natural gas, and other basic commodities, the CFTC suspended this rulemaking. CFTC Acting Chairman Walt Lukken announced that in light of “current market conditions and the uncertainty surrounding additional speculative money in these markets,” the Commission would be “very cautious” about proceeding with the rulemaking and requested additional comments.<sup>204</sup> The Acting Chairman stated: “I believe that before acting, this agency must be certain that additional speculative pressures will not exacerbate the anomalies we are experiencing in these markets.”

A few months later, the CFTC staff recommended that the CFTC consider a more limited risk management exemption than the one outlined in the suspended rulemaking. In its *Report on Commodity Swap Dealers and Index Traders*, issued in September 2008, the CFTC staff recommended that the Commission:

“develop an advance notice of proposed rulemaking that would address whether to eliminate the *bona fide* hedge exemption for swap dealers and replace it with a limited risk management exemption that is conditioned upon, among other things: (1) an obligation to report to the CFTC and applicable self regulatory organizations when certain noncommercial swap clients reach certain position levels in related exchange traded contracts, and/or (2) a certification that none of a swap dealer’s noncommercial swap clients exceed specified position limits in related exchange-traded contracts.”<sup>205</sup>

<sup>203</sup> 72 Fed. Reg. at p. 66099. The proposed rule would have imposed a number of conditions that an applicant had to satisfy to be granted a risk management exemption: (1) the positions had to be established and liquidated in an orderly manner; (2) the positions had to be part of a broadly diversified portfolio of either long-only or short-only futures based upon either (a) a fiduciary duty to match or track the results of a broadly diversified index that includes such commodities, or (b) a portfolio diversification plan that has exposure to a broadly diversified index that includes such commodity markets; (3) the exemption had to be passively managed; (4) the futures trading must be unleveraged; and (5) the positions could not be carried into the spot month. *Id.*, at p. 66100.

<sup>204</sup> See Exhibit 8, Opening Statement of Acting Chairman Walt Lukken, Agricultural Markets Roundtable, Commodity Futures Trading Commission Headquarters, April 22, 2008.

<sup>205</sup> The CFTC staff explained that these conditions were designed to ensure that noncommercial counterparties are not purposefully evading the oversight and limits of the CFTC and exchanges, and that manipulation is not occurring outside of regulatory view. *CFTC Staff Report on*

In response to the staff recommendation, on March 24, 2009, the CFTC issued a “concept release” seeking public comment on whether to create a new “risk management” exemption to existing commodity position limits, and, if so, what terms and conditions should apply.<sup>206</sup> The concept release traced the history of the CFTC’s application of the bona fide hedge exemption to swap dealers and others for index fund investments, as well as the staff’s recommendation in the September 2008 Report to address this issue. It described the proposed “conditional limited risk management exemption” as “essentially look[ing] through the swap dealer to its counterparty traders.” The CFTC stated that creating this new exemption would have “the potential to bring greater transparency and accountability to the marketplace and to guard against possible manipulation.” It requested comment on a number of specific questions, including whether the CFTC should continue to allow swap dealers to qualify for exemption under the current definition of a bona fide hedge; whether the CFTC should develop a new “limited risk management exemption” for swap dealers; which transactions could qualify for the new exemption; what conditions should apply to the exemption; whether there should be an overall limit to the size of the exemption; and how to ensure that the exemption was not being used to circumvent position limits by individual traders.

The CFTC proposal invites public comment on the issue of how commodity index trading affects the futures markets and whether – and if so, to what extent – the CFTC should continue to grant exemptions from position limits for index traders. As the next section shows, the large presence of commodity index traders in the Chicago wheat futures market has increased the difference between futures and cash prices (basis) and impeded price convergence at contract expiration. Under these circumstances, the CFTC should not grant any type of exemption from position limits to commodity index traders in the wheat market, and should instead phase out the exemptions already provided.

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*Commodity Swap Dealers*, at p. 34. If implemented, the recommended certification condition for a swap dealer’s clients would represent a key new limitation.

<sup>206</sup> CFTC, *Concept Release on Whether To Eliminate the Bona Fide Hedge Exemption for Certain Swap Dealers and Create a New Limited Risk Management Exemption From Speculative Position Limits*, 74 Fed. Reg. 12282 (March 24, 2009).

*"A futures market is not a scholarly seminar in which learned men debate what is, and arrive at, an equilibrium price, it is a game in which businessmen compete, with money at hazard, to establish a market price that works."*

*--Professor Thomas Hieronymus<sup>207</sup>*

## V. IMPACT OF INDEX TRADING ON THE WHEAT MARKET

Over the past several years, the traditional relationship between the prices of soft red winter wheat in the Chicago futures market and the price of wheat in the cash market has broken down. Increasingly, the price of wheat futures on the Chicago exchange has been significantly higher than the price of wheat in the cash market, resulting in an unprecedented large difference (basis) between the two. In addition, the two prices have failed to converge as the nearest futures contract reaches expiration. The increasing gap between the futures and cash prices (basis), together with the failure of convergence, have seriously impaired the ability of farmers, grain elevators, grain merchants, grain processors, and others in the agriculture industry to use the Chicago wheat futures market to manage and reduce the price risks arising from their operations in the wheat market.

The Subcommittee investigation finds there is substantial and persuasive evidence that the large presence of commodity index traders in the Chicago wheat futures market is a major reason for the breakdown in the relationship between the Chicago futures market and the cash prices for wheat. This evidence indicates that the large number of futures contracts purchased and held (long open interest) by index traders has created a significant additional demand for wheat futures contracts on the Chicago exchange that is unrelated to the supply of and demand for wheat in the cash market. As a result of this significant additional demand – which has increased the demand for wheat futures contracts by between 30 and 100% during the course of the past three years – wheat futures prices have increased relative to wheat cash prices. The increase in futures prices relative to the cash prices has created a substantial incentive for grain elevators to place more wheat in storage, hold it, and sell it at the higher prices in the futures market, rather than sell the wheat immediately in the cash market. Because it has been so profitable to store the grain in this manner, grain elevators and other traders no longer have a sufficient financial incentive to engage in the type of arbitrage transactions that normally occur when a futures

<sup>207</sup> Hieronymus, at p. 327.

contract expires, in which buyers and sellers play the futures and cash markets against each other until the prices in the two markets converge. The result is an abnormal, large, and persistent difference between wheat futures and cash prices and a frequent failure of convergence at contract expiration.

This section of the Report presents evidence on the extent of the breakdown in the relationship between the Chicago wheat futures and cash prices, and the contributing role of the large amount of commodity index trading on the Chicago exchange.

#### **A. Pricing Breakdown in the Wheat Futures Market**

The traditional relationship between the Chicago wheat futures market and the cash market for wheat has broken down in three distinct ways. First, since 2006, market data shows that the price of wheat in the Chicago futures market frequently has been significantly higher than the price of wheat in the cash market. Second, during this same period, the market data shows that the wheat futures and cash prices have often failed to converge at the expiration of the Chicago wheat futures contracts. Third, during most of 2008, the market data shows that wheat futures prices were not just higher than the cash price, but were at a level unrelated to the fundamentals of supply and demand in the cash market at the time. This set of pricing problems indicates that the underlying problem in the Chicago wheat futures market is not merely a lack of convergence at contract expiration, as is often stated, but a problem of consistently elevated futures prices relative to the cash market.

**Increasing Futures and Cash Price Gap – Daily Basis.** Market data obtained and analyzed by the Subcommittee shows that, since 2006, the difference between Chicago wheat futures prices and cash prices has steadily increased. Figure 26 presents data showing the daily difference between the price of the Chicago and Kansas City wheat futures contracts and the average cash price for each type of wheat.<sup>208</sup> As

<sup>208</sup> The Subcommittee calculated the daily basis by using the daily average cash price for each type of wheat provided by the MGEX daily cash index, and then subtracting this cash price from the futures price as shown on the relevant exchange for the first-month futures contract price on the same day for the same type of wheat. Using a daily basis computed from the MGEX cash index is useful, because it provides the average price calculated from multiple locations and provides data on the behavior of the basis that is comparable to the basis data from individual markets or delivery locations for the wheat. The “average” basis derived from the MGEX cash index is directly related to the basis at the delivery locations – typically the basis at any particular location will differ from the basis at the contract delivery location by a constant value, namely the cost of transporting the commodity from the particular location to the contract delivery location. The average basis, therefore, should differ from the basis at the delivery location only by the average cost of transportation to the delivery location. A change in the basis at the



explained earlier, the three U.S. exchanges that trade wheat futures contracts are in Chicago, Kansas City, and Minneapolis; the Chicago exchange has significantly more trading volume in wheat and a substantially greater proportion of index trading in wheat contracts than the other two exchanges.<sup>209</sup>

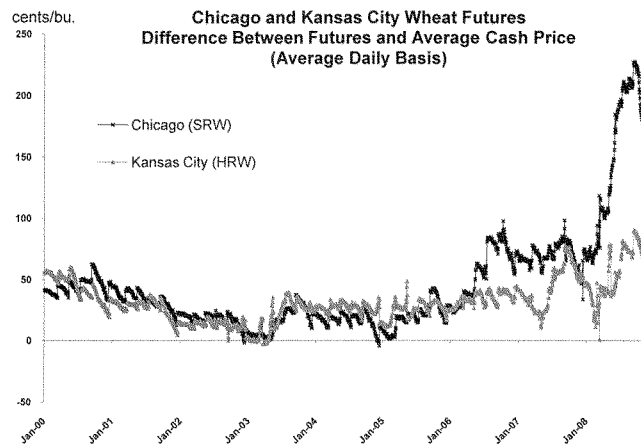
Figure 26 indicates that, prior to 2005, the average daily basis in the Chicago and Kansas City wheat futures markets behaved similarly. From 2000 to 2005, the average daily difference between the futures price for soft red winter wheat traded on the Chicago exchange and the average cash price for that type of wheat was about 25 cents per bushel. Over that same time period, the average daily difference between the

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the cost of transporting the commodity from the particular location to the contract delivery location. The average basis, therefore, should differ from the basis at the delivery location only by the average cost of transportation to the delivery location. A change in the basis at the delivery locations over time should be reflected in a corresponding change in the average basis over that same period of time. Traders interviewed by the Subcommittee stated that when hedging they preferred to use the basis at the delivery locations rather than a basis computed from the MGEX cash index basis, because the MGEX cash index was based upon bids rather than actual reported transaction prices and because they were more familiar with the delivery location basis. The Subcommittee's analysis of the relationship between the daily basis calculated in this manner from the MGEX index and the daily basis calculated from USDA data at specific delivery points indicates that the MGEX data is as reliable as the USDA data for the purposes of these calculations and this analysis.

<sup>209</sup> As shown in the prior section, as much as 50% of the outstanding wheat contracts (long open interest) on the Chicago exchange is held by index traders and up to 30% is held by index traders on the Kansas City Exchange. According to CFTC data, there is no index trading on the Minneapolis exchange. The following charts do not include basis data from the Minneapolis exchange, however, because Minneapolis wheat prices experienced unusual extremes over the last two years, resulting in unusual and extreme swings in the basis. Prior to late 2007, the average basis on expiration for the Minneapolis wheat contract was relatively stable. Starting in late 2007, however, the average basis on expiration started to increase substantially, reaching an extraordinarily high level of around \$2.50 in March and May of 2008. These high basis levels were not due to a general lack of price convergence in the Minneapolis wheat market. Rather, they reflected the dramatic volatility in Minneapolis wheat prices in late 2007 due to record low levels of wheat in storage and high global demand. See, e.g., Anthony Faiola, *The New Economics of Hunger*, Washington Post, April 27, 2008; Joshua Boak, *Short wheat stocks yield price storm*, Chicago Tribune, February 28, 2008 ("We have never seen anything like this before," [KCBOT Chairman Jeff] Voge said. "Prices are going up more in one day than they have during entire years in the past."); Lauren Etter, *Markets on Tear; Wheat, Oil, Euro – Grain Trading Explodes in the Minneapolis Pits Speculators Flood In*, Wall Street Journal, February 27, 2008 ("Minneapolis has become ground-zero for global wheat following Agriculture Dept.'s January statement that winter-wheat plantings were less than expected"); David Streitfeld, *In Price and Supply, Wheat is the Unstable Staple*, New York Times, February 13, 2008 ("Prices have been gyrating in recent days as traders tried to figure out what to make of the situation. On Tuesday, prices for a sought-after variety, spring wheat, jumped to \$16.73 a bushel on the Minneapolis Grain Exchange, the latest of several records."). Once the grain shortage was alleviated in early 2008, the average basis for hard spring wheat fell back to levels well within historical norms. The extreme price volatility in the Minneapolis wheat market from late 2007 to early 2008, with the resulting basis changes, renders the Minneapolis basis data an unreliable benchmark for analyzing the Minneapolis wheat market, which has virtually no index traders, and for understanding how that data compares to the basis data from Chicago and Kansas City, both of which have substantial index trading.

futures price for hard red winter wheat traded on the Kansas City exchange and the cash price for that type of wheat was about 26 cents per bushel. In 2006, the basis in the Kansas City futures market remained about the same, but the basis in the Chicago futures market began to climb. From 2007 through 2008, the average daily basis for wheat traded on the Chicago exchange jumped to \$1.10 per bushel; on the Kansas City exchange during this period the average daily basis rose to nearly half that amount, about 51 cents per bushel. During 2008, on the Chicago exchange, the average daily basis reached a maximum of about \$2.25 per bushel, whereas on the Kansas City exchange the maximum basis reached about 90 cents per bushel. The average daily basis increased on both exchanges, but the increase in Chicago was more dramatic and sustained.<sup>210</sup>

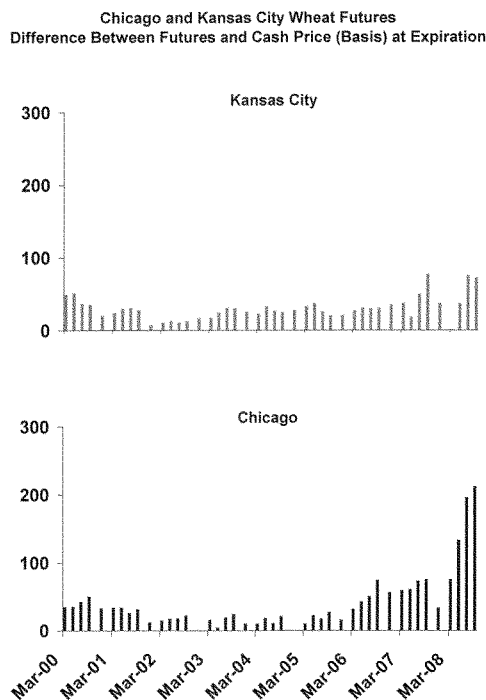


**Figure 26.** Daily basis, computed from MGEX cash index prices for HRW and SRW. Data source: MGEX, KCBOT, CME.

**Increasing Basis at Contract Expiration.** In addition to the unusually high daily difference between the futures and cash prices for wheat on the Chicago exchange, market data shows that, since 2006, there has also been an increasing failure of the wheat futures and cash prices to converge at contract expiration. Figure 27 presents data

<sup>210</sup> The Subcommittee investigation does not attribute the increasing daily basis depicted in Figure 26 solely to index trading. Other factors also contributed to the increase. During this period, for example, rising oil, gasoline, and diesel fuel prices increased the cost of transporting wheat by rail, truck, or barge, and could have contributed to the increase in the basis in both markets. Increases in the cost of transportation alone, however, cannot account for the much higher increase in the daily basis for Chicago wheat as compared to Kansas City wheat.

showing that the difference between the price of the expiring Chicago soft red winter wheat futures contract and the average cash price for soft red winter wheat rose from an average of about 21 cents during the five-year period 2000-2005, to about 56 cents over a two-year period from 2006 to 2007, to \$1.53 in 2008.<sup>211</sup> In comparison, over the same time periods, the average basis at contract expiration for the Kansas City hard red winter wheat futures contract rose from an average of 26 cents from 2000 to 2005, to about 37 cents from 2006 to 2007, to about 50 cents in 2008, a much narrower increase in the basis.<sup>212</sup> This data shows that, over the past few years, the Chicago wheat market has experienced a dramatic and sustained lack of price convergence.



**Figure 27.** Increasing lack of convergence between the CME SRW wheat futures contract and the cash price of SRW wheat. Data sources: CME, KCBOT, MGEX.

<sup>211</sup> The Subcommittee compiled the basis data in Figure 27, again using the MGEX daily cash index to determine the average daily cash price for wheat. The data in Figure 27 is consistent with the basis data at the delivery locations for the Chicago and Kansas City contracts.

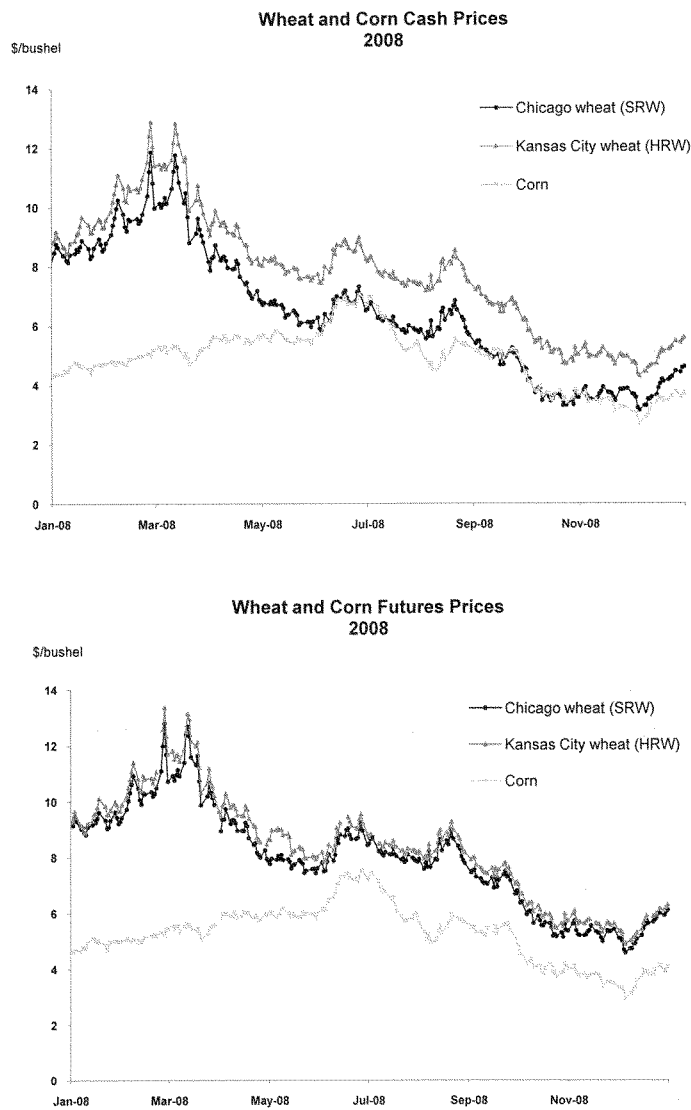
<sup>212</sup> The average basis at contract expiration for the Kansas City wheat contract generally remained below 36 cents throughout this period. However, in three months – September 2007, July 2008, and September 2008 – the basis increased to over 70 cents.

**Futures Prices Inconsistent With Cash Market Fundamentals.**

The daily basis data and contract basis expiration data analyzed by the Subcommittee provides some quantification of the extent of the pricing problems in the Chicago wheat market. The market data also shows how severely disconnected the price of Chicago wheat futures became in relation to the actual cash market for soft red winter wheat throughout the latter half of 2008.

Figure 28 presents data showing that, beginning in the spring of 2008, soft red winter wheat prices in the cash market fell from a peak of about \$12 per bushel to a low of about \$3 per bushel by December 2008. This drop in the price was due in part to a large wheat harvest in the summer of 2008, planted as a result of the high wheat prices that prevailed during most of 2007. The resulting 2008 soft red winter wheat surplus depressed the price of this wheat in the cash market. Soft red winter wheat was so plentiful that it began to be used for animal feed. That is part of the reason why the soft red winter wheat cash price fell all the way down to the price of corn, which is also used at times for animal feed. In the Chicago futures market, however, it was a different story. The soft red winter wheat futures price declined during 2008, but remained substantially above the price in the cash market, often by as much as \$1.50 to \$2 per bushel, an unprecedented price difference. In fact, during this period the soft red winter wheat futures price remained close to the price of futures contracts for higher-quality hard red winter wheat. In short, for much of 2008, at the same time soft red winter wheat was selling in the cash market for the price of lower-quality corn, it was selling for a much higher price on the Chicago futures exchange, very close to the price of higher-quality, higher-protein wheat. This pricing data shows that, during 2008, Chicago wheat futures prices were plainly inconsistent with wheat cash prices.

In sum, the market data analyzed by the Subcommittee shows that, over the last few years, the difference in price between Chicago wheat futures contracts and the cash price of wheat (basis) has increased significantly, that the two prices have frequently failed to converge at contract expiration by a large amount, and that in 2008, the Chicago futures price for soft red winter wheat became severely disconnected from the fundamentals of supply and demand in the cash market.



**Figure 28.** During 2008, SRW was selling in the cash market for the same price as a lower-quality commodity, while in the futures market it was selling for the same price as a higher-quality commodity. Data source: CME, KCBOT, MGEX.

## **B. The Role of Index Trading in Wheat Pricing Problems**

The Subcommittee investigation found significant and persuasive evidence that the large number of wheat futures contracts (long open interest) held by commodity index traders is a primary reason for the pricing problems in the wheat market just described, including the increasing daily difference between wheat futures prices and cash prices (basis), the increasing lack of price convergence at contract expiration, and the disconnect between wheat futures prices and cash market fundamentals in Chicago during 2008. This evidence consists of the following:

- Index trading and pricing trends in the wheat market;
- Subcommittee interviews with market participants;
- Testimony presented by market participants to the CFTC;
- Financial and academic analyses; and
- Commodity market theory on how futures prices are established.

Each of these factors is discussed below.

### **1. Index Trading and Pricing Trends in the Wheat Market**

#### **a. Volume of Index Trading in the Wheat Market**

The percentage of outstanding wheat contracts (long open interest) held by index traders in the Chicago wheat futures market is significantly greater than the percentage held by index traders in any other agricultural commodity market.<sup>213</sup> As shown in the prior section, since 2006, commodity index traders have held between 35 and 50% of the outstanding wheat contracts purchased (long open interest) on the Chicago exchange, and between about 20 and 30% of the outstanding

<sup>213</sup> Index traders also participate in the futures markets for corn, soybeans, soybean oil, cotton, lean hogs, live cattle, feeder cattle, cocoa, sugar, and coffee. Aside from wheat, the other commodity markets in which index traders hold a substantial share of the long open interest are the futures markets for two livestock commodities, lean hogs and live cattle. Lean hog futures contracts are financially settled, meaning that the price of the expiring futures contract is set at the price of the commodity in the cash market at contract expiration. By definition, therefore, lean hog futures and cash prices will be equal at settlement, so there is no problem with convergence. Live cattle, unlike grain, cannot be placed in storage from one contract expiration to another. That constraint means there is always an active cash market for live cattle at contract expiration that helps to force convergence.

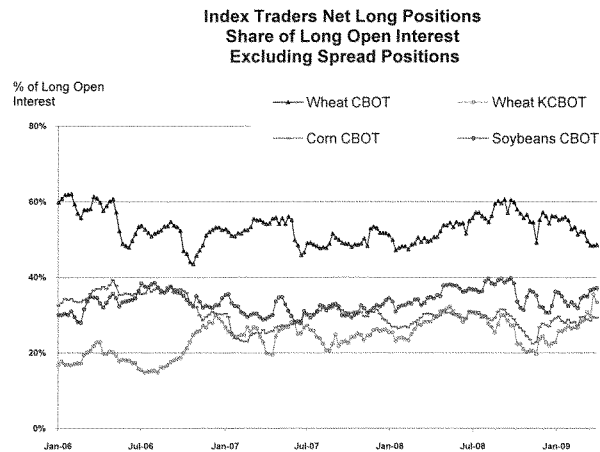
wheat contracts purchased (long open interest) on the Kansas City exchange.<sup>214</sup>

These percentages alone, however, do not present a full measure of the presence or influence of index-related instruments in these markets. In several respects, expressing the size of index trading as a simple percentage of the total long open interest held by index traders understates their presence. First, except for the period just prior to the periodic roll of the near-term contracts into longer-term contracts, all of the open interest due to index traders is held in futures contracts other than the first month contract nearest expiration. The share of long open interest held by index traders in the months other than the first month is certainly larger than the share of long open interest held by these index traders in all of the months.<sup>215</sup>

Second, a significant share of the long and short open interest is held by spread traders. Spread traders do not go either long or short; they hold equal positions in two different contracts, buying one and selling the other. Index traders, on the other hand, are purely directional traders. They buy contracts and hold onto them for long periods of time. Comparing the level of index traders to the total number of directional traders provides a better indication of the relative contribution of index traders to the direction of the market than if non-directional spread traders are included in the comparison. Roughly speaking, it indicates how much of the “push” upwards in the market is due to index traders. Figure 29 indicates that index traders constitute a much larger share of the directional traders than of all traders.

<sup>214</sup> See Figures 19 and 20.

<sup>215</sup> The CFTC commitment of traders data does not break out any trader positions by contract months. Based on the Subcommittee’s review of publicly available open interest data from the Chicago exchange, the open interest in the first month represents, on average in recent years, an estimated 10-20% of the total open interest at the time the roll of commodity index funds is completed under the S&P GSCI roll methodology. Assuming index traders represent 35-50% of the total long open interest at the time the standard roll is completed, it follows that at the time the standard roll is completed index traders could represent anywhere from about 38% (35%/0.9) to about 62% (50%/0.8) of the open interest in the second and following months.



**Figure 29.** The net long open interest due to index instruments represents up to 60% of the long open interest (excluding spread positions) in the Chicago wheat futures market. Data source: CFTC.

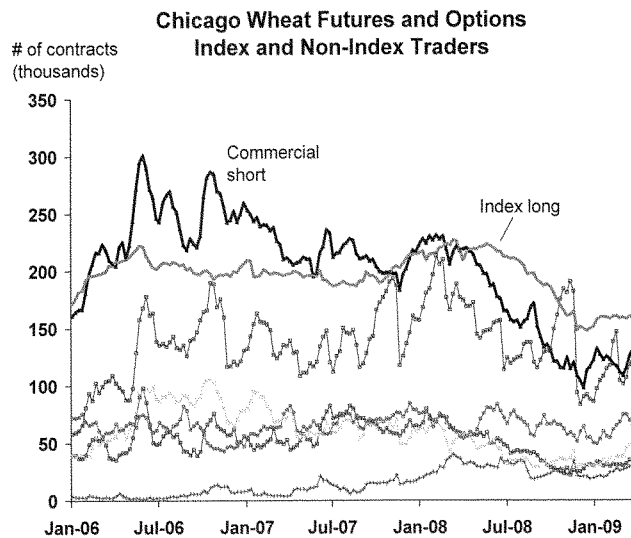
Third, another measure of the extent of index trading in the futures market is to examine the long open interest held by index traders compared to the short open interest held by traders classified by the CFTC as “commercial” traders. The data indicates that the long open interest held by index traders in the Chicago wheat market is relatively high compared to the short open interest held by these commercial traders. In some instances, the data indicates that there have been more index traders who want to buy futures contracts than there are short commercial traders willing to sell them. In these instances, when the demand exceeds the supply, index traders looking to buy must bid up the price in order to attract additional sellers.

Over the past few years, the relative balance between index traders and short commercial traders in the Chicago futures market has been very different from the balance in the other markets in which index traders are present, including the Kansas City wheat market and the Chicago corn and soybean markets as well. In these other markets the open interest due to short commercial traders has generally significantly exceeded the open interest from long index traders. (See Figure 30). In contrast, in the Chicago wheat market during the period in which data is available, the number of long index traders generally has been roughly equal to the number of short commercial traders. On several occasions,

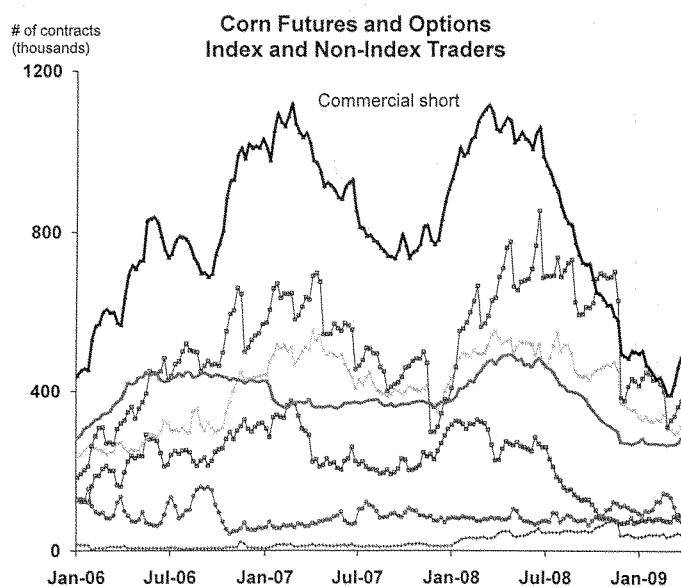
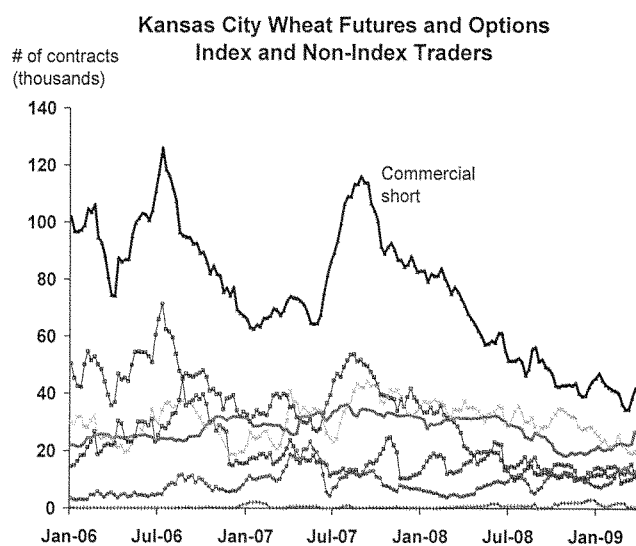


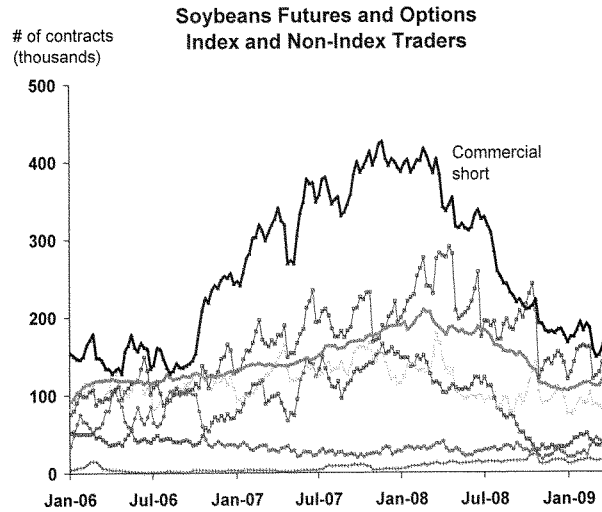
the latest being an extended period in 2008, the open interest due to index traders exceeded that of short commercial traders.

For example, on July 1, 2008, index traders held 212,012 contracts for the future delivery of Chicago wheat. On the same date, short commercial traders had 165,044 contracts outstanding for the future delivery of Chicago wheat. Since each contract represents 5,000 bushels of wheat, as of July 1, 2008, index traders had bought 1,060,060,000 bushels of wheat for futures delivery, while commercial sellers had supplied only 825,220,000 million bushels to meet that demand. In short, on that date, demand for soft red winter wheat futures from index traders exceeded the supply provided by commercial sellers by roughly 20%. When demand substantially exceeds supply, the price of wheat futures must rise to attract more sellers.<sup>216</sup>



<sup>216</sup> One noted futures market scholar described how additional purchases of futures contracts by speculators increase the price of futures contracts as follows: "Assume there is an exogenous increase in net speculative purchases of futures. This tends to drive up the futures price relative to the spot price, and by increasing the return to short hedgers induces a larger amount. Similarly, an exogenous increase in speculative sales of futures lowers the futures price which increases the return to and therefore the amount of long hedging." Lester G. Telser, *The Supply of Speculative Services in Wheat, Corn, and Soybeans*, Food Research Institute Studies, Supplement to Vol. VII, 1967, at p. 163 (available in [farmdoc](#) archives).





**Figure 30.** Relative share of index trading in grain futures markets. Data source: CFTC.



The result is that the Chicago wheat futures price rose higher than the price in the cash market and did so, not in response to normal supply and demand factors related to the commercial delivery of wheat in the cash market, but in response to the additional demand generated by index traders seeking to offset their sales of commodity index instruments. Overall, from 2006-2008, index traders increased the demand for wheat futures contracts by a significant amount – from between 33% to 100%.<sup>217</sup>

The demand for futures contracts from index trading directly affects futures prices only, since index traders do not operate in the cash market, and they have no interest in taking delivery or making use of a wheat crop. They are not buying futures contracts to hedge any actual

<sup>217</sup> During this period index traders constituted between about 25 and 50% of the total long open interest. This means that these index traders increased the long open interest by 33% (25/75) to 100% (50/50).

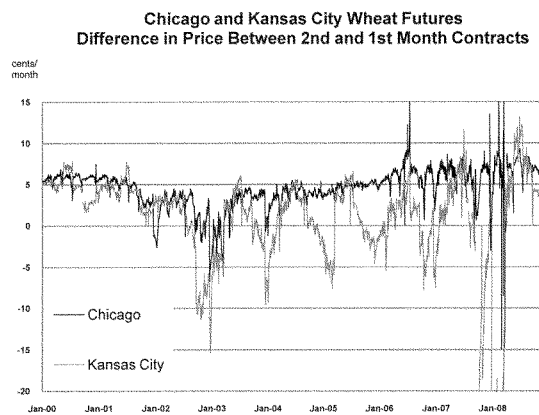
purchases of wheat in the cash market. Instead, index traders are buying futures contracts to offset the index instruments they have sold to third parties. They purchase futures contracts to offset this financial exposure, regardless of the price of those contracts or the underlying fundamentals of supply and demand in the cash market. The demand for wheat futures created by index traders is unrelated to the demand for wheat in the cash market and unrelated to the type of price changes in the cash market that typically affect decisions by market participants to buy or sell. In light of all of these factors, it is not surprising that, in recent years as index trading grew significantly, the price of Chicago wheat futures have become increasingly disconnected from the price of wheat in the cash market.

#### **b. Impact of Index Trading on Short-Term Futures Price Spreads**

The impact of index trading on the Chicago wheat market can be seen by observing the change in price relationships between various futures contracts on the Chicago exchange as compared to the corresponding contracts on the Kansas City and Minneapolis exchanges. In particular, a number of Chicago wheat price spreads (the difference in price between two different futures contracts) increased significantly over the same time period that the number of wheat contracts held by index traders on the Chicago exchange rose significantly as well. In contrast, the same price spreads on the Kansas City and Minneapolis exchanges did not increase by a similar amount during the same time period. Supply and demand fundamentals in the cash market alone cannot account for the greater price spreads in the Chicago market. The most significant factor differentiating the Chicago wheat futures market from the other wheat futures markets is the large number of wheat contracts purchased and held by index traders.

Figure 31 shows the difference in price – the price spread – between the first and second month futures wheat contracts on both the Chicago and Kansas City exchanges between 2000 and 2008. The data shows futures prices for soft red winter wheat traded on the Chicago exchange and for hard red winter wheat traded on the Kansas City exchange. The difference in prices between a second month futures contract and a first month futures contract is called the “2-1” spread. The data shows that, before 2004, the 2-1 spread for Chicago wheat futures contracts generally tracked the 2-1 spread for Kansas City wheat; the price difference in both markets was generally less than 6 cents,

meaning the second month prices were generally higher than the first month prices. Beginning in the fall of 2004, however, the 2-1 spread for Chicago wheat futures increased significantly relative to the spread for Kansas City wheat futures, frequently exceeding 7 cents, while the Kansas City spread typically was well below that amount. The greater price spread on the Chicago exchange as compared to the Kansas City exchange has generally persisted since 2004, with only a few limited exceptions.

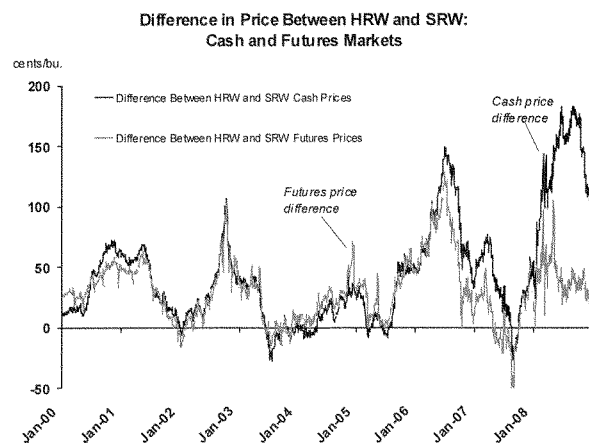


**Figure 31.** Beginning in 2004, the 2-1 spread for Chicago wheat grew much larger than for Kansas City wheat. Data source: CME, KCBOT.

The increase in the spreads and the generally higher futures prices in the Chicago wheat futures market compared to the Kansas City wheat futures market cannot be fully explained using traditional considerations of supply and demand in the cash markets for soft red winter and hard red winter wheat. The soft red wheat crop, harvested in the summer of 2005 and marketed from 2005 to 2006, was smaller than average, at 309 million bushels. On the other hand, the hard red winter wheat crop marketed from 2005 to 2006, was larger than average, at 930 million bushels. The smaller than average soft winter wheat crop should have resulted in a smaller 2-1 spread, since a reduction in supply normally results in higher near-term prices relative to the longer-term price. Instead, the 2-1 price spread increased. Professor Irwin and his colleagues have concluded that wheat futures prices from mid-2006 until mid-2007 were not supported by the supply and demand conditions in the cash market. They wrote: “Futures prices of SRW wheat were

higher than could be supported by fundamentals of supply and demand, and therefore, higher than could be supported by the cash market.”<sup>218</sup> The large increase in the 2-1 spread in the Chicago wheat futures market from 2005-2007 indicates the strong influence of an additional factor, unrelated to supply and demand, such as index trading, in the Chicago futures market.

The divergence of the Chicago wheat futures market from the fundamentals of supply and demand in the cash market can also be observed by comparing the spreads between futures and cash prices in the various wheat markets. Figure 32 displays the difference in price between the cash price of soft red winter wheat and the cash price of hard red winter wheat, and the difference in price between the first month futures contracts for soft red winter wheat on the Chicago exchange and the first month futures contract for hard red winter wheat on the Kansas City exchange.



**Figure 32.** In 2006, the price of Chicago wheat futures became artificially elevated relative to the cash market. Data source: CME, KCBOT, MGEX.

<sup>218</sup> Professor Irwin and his colleagues state that soft red winter wheat futures prices during this period were driven higher “by the overall increase in wheat prices and the preference of many market participants to trade in the more liquid Chicago market rather than at other exchanges.” Irwin et al. (May 2007), at p. 14. It is unclear how greater liquidity – meaning a greater trading volume and open interest – in the Chicago market would lead to an increase in the price of wheat. Generally, greater liquidity should lead to prices that are more aligned with market fundamentals. Moreover, most of the additional liquidity that entered the Chicago wheat futures market during the period in which the convergence problem dramatically worsened resulted from index trading. If the source of the pricing problems in the Chicago market is due to additional liquidity in that market, and index traders have been the greatest source of additional liquidity during the period in which those problems worsened, it is then logical to conclude that the increase in index trading is the source of these pricing problems.

Figure 32 shows that prior to 2006, the difference between the price of the first month futures contract for wheat on the Chicago exchange and the first month contract for wheat on the Kansas City exchange generally followed the difference in price between the cash prices for the two types of wheat. Beginning in the spring of 2006, the difference in price between these two types of wheat in the Chicago and Kansas City futures markets became significantly less than the difference in price between these two types of wheat in the cash market. This pricing disparity indicates that, beginning in 2006, the Chicago wheat futures price was increasingly elevated with respect to the price of wheat in the cash market. As the price of soft red winter wheat on the Chicago exchange increased relative to the price of soft red winter wheat in the cash market, the difference in price between Chicago wheat futures and Kansas City wheat futures became much less than the difference in price between the two types of wheat in the cash market.<sup>219</sup>

The most straightforward explanation for the disconnect between the price of soft red winter wheat in the cash and futures markets is the increasing presence of price-insensitive commodity index traders buying and holding Chicago wheat futures contracts. Index traders buy and hold futures contracts without regard to the fundamentals of supply and demand in the cash market. Since 2006, index traders have constituted between 35 and 50% of the total outstanding long open interest in the Chicago wheat market. It is to be expected that if nearly half of the holders of long open interest are pursuing a trading strategy for the buying and holding of wheat futures that is insensitive to the fundamentals of supply and demand in the cash market, then the wheat futures market will become increasingly reflective of that price-insensitive strategy and less reflective of the fundamentals of supply and demand in the cash market.<sup>220</sup> In effect, the large presence of commodity index traders, who do not buy or sell in relation to the

<sup>219</sup> The extent to which the gap between the intermarket (i.e., between two different wheat markets) cash and futures price spreads increased since 2005 can be seen in Figure 26. The difference between the intermarket cash and futures price spreads equals the difference in intermarket basis:  $(\text{HRW cash} - \text{SRW cash}) - (\text{HRW futures} - \text{SRW futures}) = (\text{HRW cash} - \text{HRW futures}) - (\text{SRW cash} - \text{SRW futures}) = \text{HRW basis} - \text{SRW basis}$ . Thus, the extent to which the two lines in Figure 32 begin to diverge in 2006 is shown in Figure 26, which displays the average or "index" basis for the Chicago SRW and Kansas City HRW wheat markets.

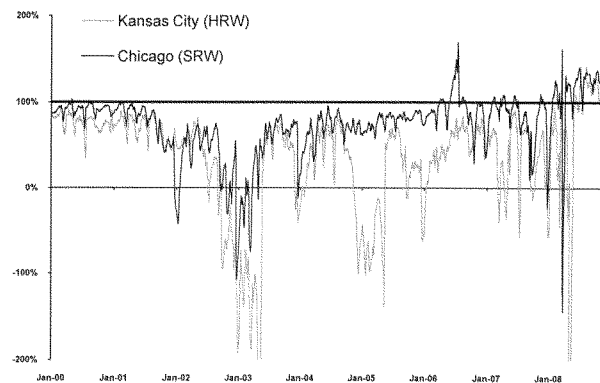
<sup>220</sup> If a market is constituted half and half between price-sensitive traders and price-insensitive traders who only buy and hold, it is difficult to imagine how the half of the market that is price-sensitive, which both buys and sells according to the various traders' perceptions and expectations regarding supply and demand, can have a greater upward effect on price than the other half that only buys and holds.

fundamentals in the cash market, have created an additional supply-demand dynamic in the Chicago wheat futures market that is not related to the supply-demand dynamic in the cash market. The result are prices which not only fail to converge at contract expiration, but are the product of a fundamental disconnect between the futures and cash markets for wheat.

Because the purchaser of an intermonth spread such as the 2-1 spread depicted in Figure 31 is, in effect, helping to pay for the cost of storing the commodity over the length of the spread, it is useful to express a spread as the percentage of the total carrying costs for the commodity over that time period (expressed as percentage of “full carry”). Figure 33 presents the same data as in Figure 31, but expressed in terms of percentage of full carry rather than cents per month.

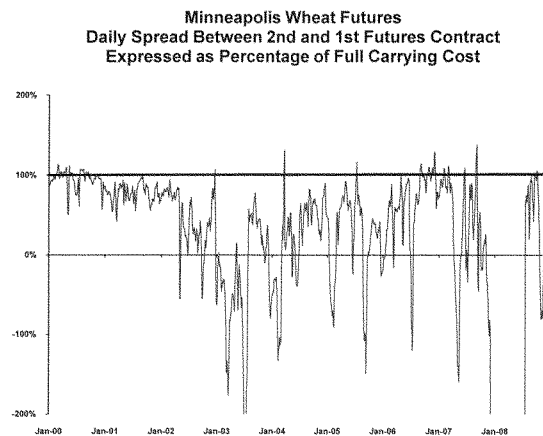
In March 2006, the 2-1 price spread in the Chicago wheat futures market reached full carry and, afterwards, regularly exceeded full carry. About 18 months later, after the 2007-2008 winter wheat crop was harvested amid high demand in the cash market, near term wheat prices increased and the Chicago market receded from full carry status. During 2008, both the Chicago and Kansas City futures exchanges returned to a full carry status for extended periods of time. In contrast, the Minneapolis market for hard red spring wheat only briefly reached full carry in the fall of 2008, following the harvest of the relatively plentiful 2008/09 crop. (Figure 34).

**Chicago and Kansas City Wheat Futures  
Price Difference Between 2nd and 1st Futures Contract  
Expressed as % of Full Carrying Cost**





**Figure 33.** The 2-1 spread for Chicago and Kansas City wheat futures expressed as a percentage of full carry. Interest rates based upon 3-month Treasury bills. Storage costs are considered to be 0.165 cents per day (approx. 5 cents/month). Displayed values represent 5-day moving averages. Data source: CME, KCBOT, US Treasury Dept.



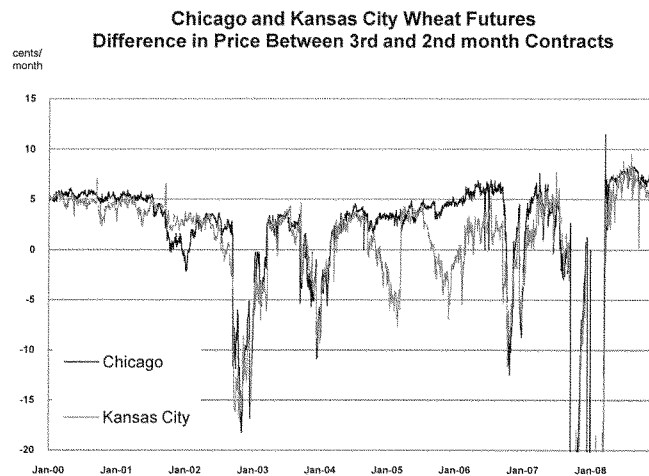
**Figure 34.** The 2-1 spread for Minneapolis wheat expressed as a percentage of full carry. Interest rates based upon 3-month Treasury bills. Displayed values represent 5-day moving averages. Data source: CFTC, US Treasury Dept.

The extent to which the 2-1 spreads in the three wheat markets has been able to provide or exceed full carry is fully consistent with the evidence that, assuming all other market conditions are equal, the substantial presence of index traders tend to increase the 2-1 spread in that market. The Chicago wheat market, with a high level of index traders, exhibits a substantial increase in the 2-1 spreads to levels consistently at and above full carry. The Kansas City wheat market, with a moderate level of index traders, exhibits a more moderate but nonetheless visible increase in the 2-1 spreads to a level at or above full carry. The Minneapolis wheat market, with no index traders, continues to exhibit virtually no tendency to exceed full carry for any extended period of time.

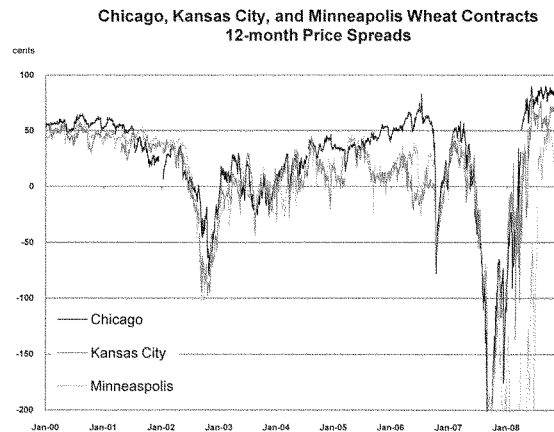
### c. Impact of Index Trading on Longer-Term Price Spreads

During the same time period from 2000 to 2008, the data shows the same pattern for price spreads between more distant wheat futures contracts on the three exchanges. Again, the data shows an increase in

the wheat price spreads on the Chicago exchange compared to the comparable price spreads on the Kansas City and Minneapolis exchanges. Figure 35 shows the price spread between the third and second month futures contracts for both the Chicago and Kansas City wheat futures contracts. This price spread is called the “3-2” spread. The data for the 3-2 spread presents a very similar picture as the data on the 2-1 spread in Figure 31 with respect to second and first month wheat futures contracts.



**Figure 35.** Beginning in 2004, the difference in price between the third-month and the second-month futures contracts grew much larger in the Chicago wheat futures market than in the Kansas City wheat futures market. Data source: CME, KCBOT.

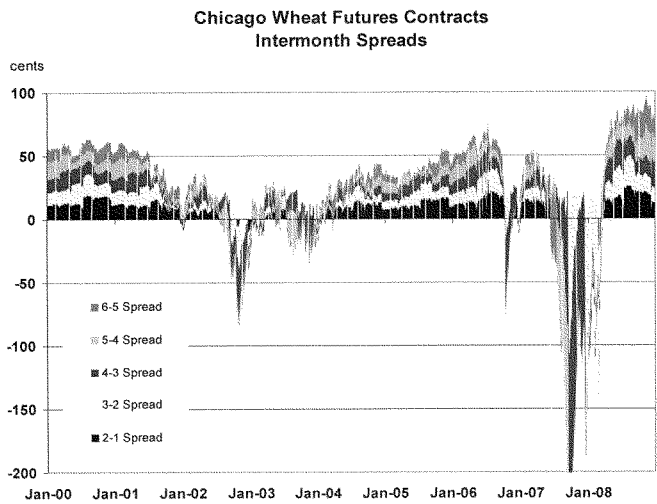


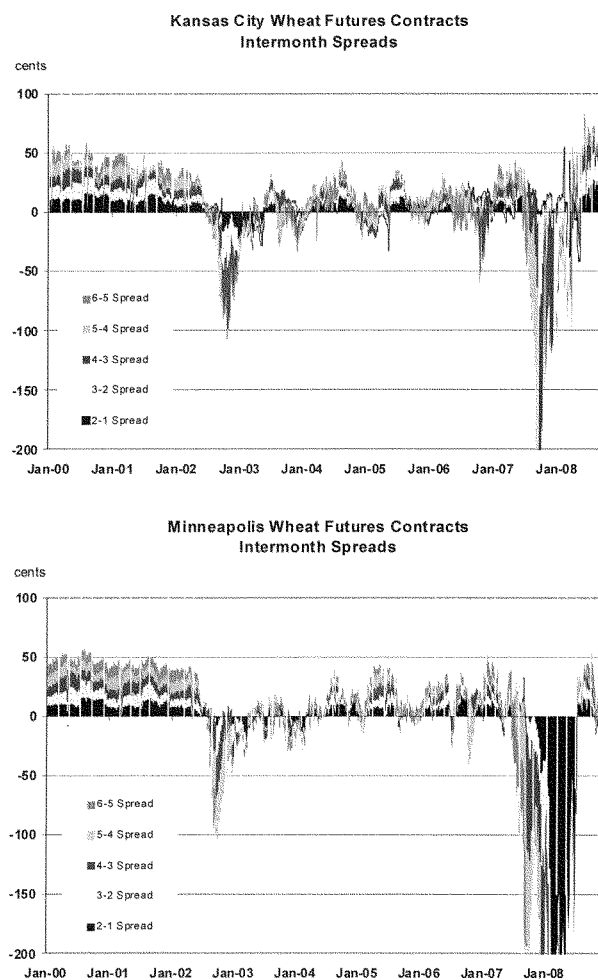
**Figure 36.** Beginning in 2004, 12-month price spread for Chicago wheat futures grew much larger than the same spread for Kansas City and Minneapolis wheat futures. Data source: CME, KCBOT, CFTC.

The pattern appears yet again when examining very long-term price spreads between wheat futures contracts that are 12 months apart. Again, the price spreads grew significantly larger in the Chicago futures market than in the Kansas City and Minneapolis futures markets. Figure 36 shows the 12-month price spreads in the three wheat futures markets. The data shows that, prior to mid-2004, these long-term price spreads behaved similarly in all three wheat markets. Beginning in September 2004, the long-term price spreads in the Chicago wheat market again began to diverge from those in the Kansas City and Minneapolis markets. Additionally, both the long-term spreads and the shorter-term spreads in the Chicago market reached historically high levels in late 2006.

The next Figure, Figure 37, presents data in three charts from five different intermonth price spreads for wheat futures contracts in each of the wheat futures markets to show the contribution of each monthly spread to the overall increase in the price spreads in the Chicago market compared to the other two markets.<sup>221</sup> The vertical white lines on the data indicate the expiration dates for the futures contracts.

<sup>221</sup> Full-page versions of these charts are included in the Appendix.



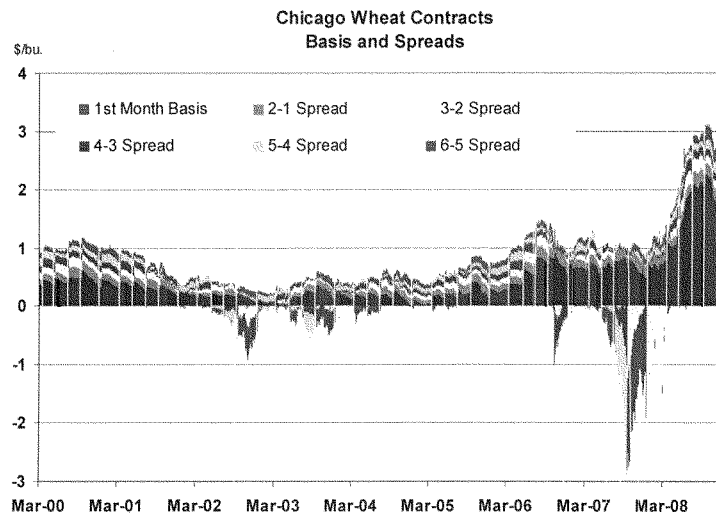


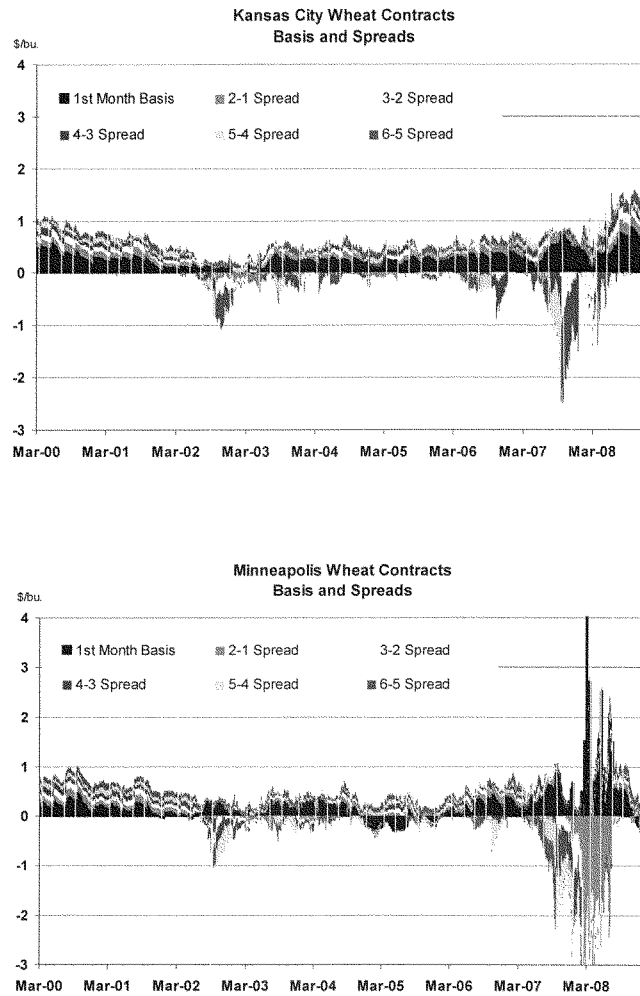
**Figure 37.** Price spreads in the three wheat futures markets. Data source: CME, KCBOT, CFTC.

The three charts in Figure 37 indicate that, since 2004, there has been a major structural change in the Chicago futures market compared to the other two futures markets. The data shows a significant increase in Chicago wheat price spreads between a number of successive futures contracts, increasing both the short-term and long-term spreads in the Chicago futures market. These increased price spreads produce thick price bands (i.e., large price spreads) on the Chicago data that are not

present in the Kansas City or Minneapolis data. The data shows that these substantial increases in price spreads in the Chicago market have occurred over several years and with respect to different size wheat crops; they cannot be explained solely by the fundamentals of supply and demand in the cash market. Rather, they are consistent with the presence of a significant number of index traders who are continuously bidding up both near-term and longer-term futures prices on the Chicago exchange.

The next three charts, in Figure 38, present the same intermonth price spread data as the prior three charts in Figure 37, but adds data showing the daily basis (difference between the price of the first month futures contract on the exchange and the average cash price using the MGEX cash index) in each market. This additional data shows how increases in the price spreads in the Chicago wheat futures contracts relate to the lack of convergence at the expiration of those contracts.



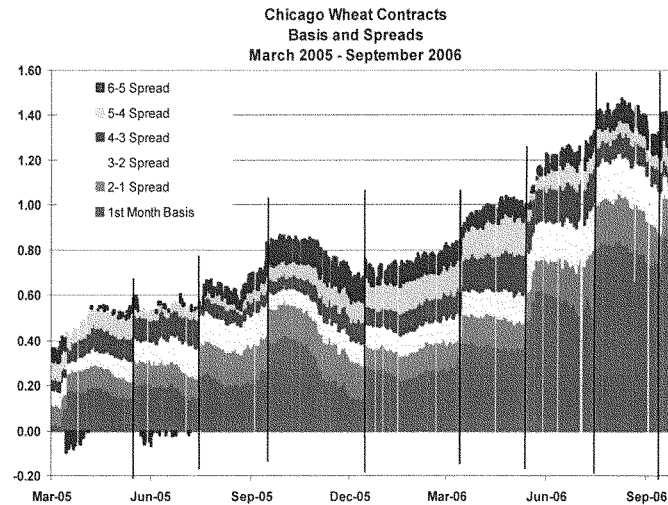


**Figure 38.** Price spreads and daily average basis in the three wheat futures markets. Data source: CME, KCBOT, CFTC, MGEX.

An examination of these three charts reveals how the increase in longer-term price spreads has contributed to the increasing basis and the lack of convergence in the Chicago wheat market, magnifying the pricing problems.

Figure 39 presents the same basis and spread information as in the first chart in Figure 38 for the Chicago exchange, but focuses solely on

the period from January 2005 to December 2007, so that the data can be seen in more detail.<sup>222</sup>



**Figure 39.** Price spreads and daily average basis in the Chicago wheat futures market, March 2005-September 2006. Data source: CME, MGEX.

Figure 39 illustrates how even when the basis is decreasing between contract expiration dates, the basis can nevertheless increase from one contract to another over multiple contracts. Figure 39 also displays how the basis is related to the intermonth spreads. Specifically, the new basis after a contract expires equals the “old” basis (i.e., the basis just prior to contract expiration) plus the “old” price spread between the first and second months (i.e., the spread just prior to contract expiration).

$$\text{New Basis} = \text{Old Basis} + 2-1 \text{ spread}$$

At the same time, the “new” 2-1 spread at the expiration of a contract will be equal to the “old” 3-2 spread. When the first month futures contract expires, the value of this “new” 2-1 spread will then become the “new” basis. In this manner, even distant intermonth spreads may eventually influence the spread between the cash and the first month futures contract.

<sup>222</sup> A full-page reproduction of Figure 39 is found in the Appendix.



Indeed, Figure 39 shows how the increase in the basis resulting from the addition of the 2-1 spread to the old basis can be greater than the decrease in the basis during the period in which the previous first month futures contract moved towards expiration. When intermonth spreads are large, as they were in the summer of 2006 and again in the summer of 2008 for the Chicago wheat contract, and there is a weak cash market, the basis exhibits a tendency to increasingly diverge rather than converge. Not only do the large intermonth spreads provide a full carry, thereby inhibiting arbitrage transactions in the cash market at the terminal elevators, but they continue to increase the basis at the expiration of each contract.

It also becomes apparent from Figures 38 and 39 that it is a strong demand for wheat in the cash market that best promotes and eventually causes convergence. This data pattern is fully consistent with the conclusion that the large number of futures contracts held by index traders in the Chicago futures market are a major factor causing the lack of convergence. When demand for wheat in the cash market is strong, the cash price moves closer to the first month futures price and the intermonth spreads are reduced as well. When demand in the cash market is weak, the cash and futures prices do not converge and intermonth spreads expand. Thus, it can be seen from Figure 38 that when the spreads collapsed in both the Kansas City or Chicago due to strong demand in the cash market, there was much better convergence.

These pricing patterns are consistent with classical models on how futures markets work. According to these models, the intermonth spreads in the grain markets are strongly influenced by the level of speculative purchases of futures contracts from hedgers who are selling futures contracts. Because it costs money to store grain, the price of grain in the future is typically higher than the price of grain today. Speculators purchasing grain for more distant delivery therefore must pay a higher price for those futures contracts than the prevailing cash price of grain. In effect, the speculators buying from the hedgers are paying for part or all of the costs of storing the grain until it is delivered. When the demand for grain is strong, such as in times of a grain shortage, immediate purchases of grain on the cash market can push up cash prices and significantly reduce the spread between the nearer and farther futures contracts. The intermonth price spreads therefore reflect the balance between the immediate demand for grain by merchants and processors and the more distant demand for grain by speculators and others.

In the Chicago wheat market, the substantial purchases of wheat futures by index traders have created a significant demand for futures contracts and increased the futures prices in more distant months. These higher prices have increased the price spreads between the more distant months and the nearer months, particularly between the second and first months. The monthly roll of futures contracts tied to commodity indexes has also contributed to the increase in these price spreads. On occasion these price spreads have increased above full carry.<sup>223</sup> These index traders have therefore provided a significant financial incentive for firms to store grain. As a result, the difference between the futures price and the cash price for Chicago wheat has on a number of occasions risen to record levels, thereby preventing convergence at contract expiration.

At other times, during periods in which there is a strong demand for wheat in the cash market, the cash price of wheat has risen relative to the futures price. The cash price increase directly reduces the basis. In addition, the strong demand in the cash market has reduced the intermonth spreads, thereby allowing the basis to continue falling across several contracts. Thus, convergence is promoted during times of strong demand in the cash market and inhibited during times of weak demand in the cash market.<sup>224</sup> The influence of index trading on price convergence, therefore, has depended in part upon the relative demand for Chicago wheat in the cash market. Ever since index-based traders have become a large presence in the Chicago wheat futures market, when demand in the cash market for wheat has been normal or weak, there has been poor convergence, but when demand in the cash market for wheat has been strong, convergence has returned. This trend can be expected to continue as long as index traders constitute a significant share of the Chicago wheat futures market.

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<sup>223</sup> A number of traders interviewed by the Subcommittee stated that a lack of confidence in price convergence for Chicago wheat contracts has itself contributed to the lack of convergence. In a properly functioning market, traders will engage in arbitrage transactions when they believe one market is overpriced relative to the other, and the pricing difference will eventually disappear. If traders believe that one market is overpriced relative to the other, but that the price differences will not disappear over time, they will not engage in arbitrage transactions because they do not have confidence that the transactions will, in fact, produce the expected result. Arbitrage only works when a sufficient number of traders believe it will work. The lack of confidence by many traders that Chicago futures and cash prices will converge, while impossible to quantify, should be considered as another factor contributing to the lack of price convergence.

<sup>224</sup> In more technical terminology, convergence is promoted when the demand for accessibility is strong relative to the supply of storage, and impeded when the demand for accessibility is weak relative to the supply of storage.

## **2. Subcommittee Interviews with Market Participants**

At the same time that the Subcommittee was compiling and analyzing market data from the three exchanges that offer wheat futures contracts, the Subcommittee contacted a wide variety of individuals and firms with expertise in the wheat and grain markets to obtain their views on the severity and nature of the pricing problems, the cause of those problems, and the role of index trading. The Subcommittee interviewed market participants encompassing the entire spectrum of the wheat industry, from farms to grain elevators to grain merchants to grain processors. The Subcommittee spoke to persons who bought and sold wheat futures contracts on the exchanges and who bought and sold actual wheat in the cash markets. In addition, the Subcommittee interviewed a number of grain market analysts, all of whom had many years of experience in the grain industry and expertise in the Chicago, Kansas City, and Minneapolis markets.

Virtually all of the grain traders and many of the market analysts provided the Subcommittee with the same explanation for the large, persistent difference in Chicago wheat futures and cash prices (basis), and for the failure of those prices to converge as the futures contracts near expiration. These grain traders and analysts stated that the most significant factor contributing to the increasing basis and the lack of price convergence was the large presence of commodity index traders in the Chicago wheat futures market. Many traders stated that index traders had created an additional demand for futures contracts that was not related to or matched by any corresponding demand in the cash market, and that the futures prices had responded to this added demand by rising to a higher level than the prices in the cash market.

In previous investigations conducted by the Subcommittee into the operation of the commodity markets, there usually has been a range of views on the causes of particular price movements. Typically, different traders with different market perspectives have had differing views on the behavior of the market. In contrast, during this investigation, there has been a striking unanimity of perspective. Virtually all of the traders and analysts contacted by the Subcommittee stated that the large presence of commodity index traders in the Chicago market was the primary factor contributing to the pricing problems in the wheat market.

Many traders and analysts explained that the higher futures prices made it more profitable for grain elevator operators to purchase grain in the cash market, place it into storage, and then hedge those grain

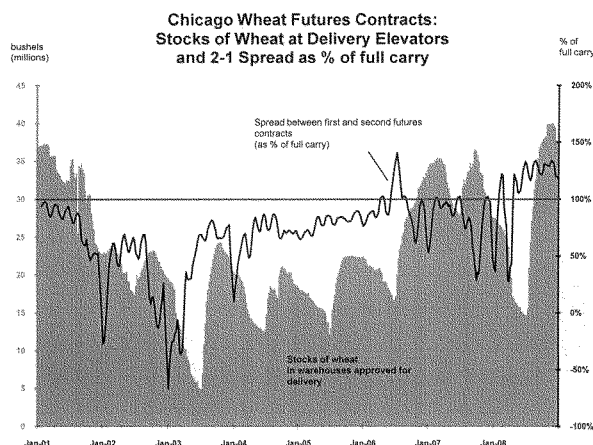
purchases with the sale of relatively high-priced futures contracts than to engage in arbitrage transactions (buying wheat in the cash market, selling futures contracts, and then delivering the wheat) at contract expiration. When price spreads are near or above full carry, a grain elevator can recover more than the full cost of storing the grain. Elevator operators and other grain market participants told the Subcommittee that, in recent years, because the futures and cash price difference has been so great, this approach – often termed “cash and carry” – was more profitable than any other type of prudent investment strategy.<sup>225</sup>

Storage data for wheat, when compared to contract price differences, illustrates the point. Figure 40 combines two sets of data for the period, 2001 to 2008: the daily price spreads between the second and first month wheat futures contracts expressed as a percentage of full carry on the Chicago exchange during these eight years, and the amount of wheat stored in the grain warehouses at the Chicago wheat futures contract delivery locations.<sup>226</sup> As Figure 40 illustrates, the amount of grain in storage at these elevators generally increased over time after futures prices rose and provided a greater financial incentive to store grain, and generally decreased when futures prices fell and provided less of a financial incentive to store grain.

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<sup>225</sup> Because only approved warehouses can make delivery under the futures contract, only these approved warehouses can directly engage in the type of arbitrage transactions that will help force convergence (i.e., buy wheat in the cash market, sell a futures contract, and deliver the wheat under the futures contract). For approved warehouses, it can be particularly profitable to engage in cash and carry transactions rather than arbitrage transactions because the cost of storage is so low.

<sup>226</sup> For a description of the term “full carry,” see Section III.



**Figure 40.** The amount of grain in storage at the terminal elevators for delivery of the Chicago wheat futures contract depends upon the incentive to store grain provided in the futures market, represented here by the percentage of full carry provided by the difference in price between the second- and first-month futures contracts. Values for the 2-1 spread reflect the 20-day moving average of the daily difference between the second- and first-month futures contracts on the CME. Full carry is computed from the 3-month Treasury bill and a daily storage fee of 0.165 cents (4.95 cents per month). Data source: CME.

Because most traders interviewed by the Subcommittee considered the large presence of index traders in the Chicago wheat market as a major underlying cause of the pricing problems in that market, these traders and market analysts were skeptical that the changes in the Chicago wheat futures contract recently adopted by the Chicago exchange and approved by the CFTC – providing additional delivery locations, higher storage fees, and revised quality specifications – would be sufficient to cure the pricing problems. These traders and analysts believed that as long as the high price spreads persisted, more storage facilities at the new delivery locations would most likely result in more grain being placed into storage at the new delivery warehouses rather than a sufficient number of cash transactions at contract expiration to force convergence. They also viewed the likely result of the increased storage fees to be an increase in the price spreads to reflect the higher costs of storage.

The traders and analysts contacted by the Subcommittee did have a range of views on what should be done to remedy the pricing problems in the Chicago wheat market. Most traders and analysts supported

revoking the exemptions and other waivers that have enabled commodity index traders to hold many more contracts than the standard position limit of 6,500 wheat contracts at a time. They thought that limiting the purchases by index traders would help relieve the demand for futures contracts that is increasing the price of wheat futures contracts relative to the cash market. Some were concerned that imposing restrictions on index traders who use the regulated exchanges might cause them to offset their financial exposures in the less transparent and unregulated over-the-counter market, and therefore would result in a loss of liquidity and transparency. Still others said that regulatory action was unnecessary, because commodity index trading would diminish over time as it became apparent that index instruments were highly speculative investments that would not necessarily generate superior returns or less risk.

### 3. Testimony Presented to the CFTC

In addition to the data analysis and interviews conducted by the Subcommittee, public testimony presented to the Commodity Futures Trading Commission (CFTC) by a number of grain market participants and analysts have identified the large amount of index trading in the Chicago wheat market as a major underlying cause of the market's pricing problems.

On April 22, 2008, the CFTC sponsored a public "Agricultural Forum" to discuss the pricing problems affecting the Chicago wheat futures market. The CFTC invited a wide range of commodity market participants to attend. A significant number of the grain market participants in this Forum pointed to the large presence of index traders in the Chicago wheat market as a major factor underlying the large and persistent increase in futures prices compared to cash prices and the lack of price convergence at contract expiration.

**National Grain and Feed Association.** The National Grain and Feed Association, for example, wrote to the CFTC:

"[The] previously reliable relationship between cash and futures has deteriorated to a point where many commercial grain hedgers are questioning the effectiveness of hedging using exchange-traded futures. Genuine convergence occurs less often and only for short periods of time. The band, or range, of convergence has widened due to several factors, including: 1) higher and more volatile transportation costs; 2) demand for storage created by biofuels growth; and 3) the

futures market running ahead of cash values due to passively managed, long-only investment capital.”<sup>227</sup>

The National Grain and Feed Association stated that although many factors typically affect price levels and basis, “we believe that one new factor – the entry of large amounts of long-only, passively managed investment capital into agricultural futures markets – is causing a disruption in markets.”<sup>228</sup>

**American Bakers Association.** The American Bakers Association (ABA), whose members produce approximately 85% of all baked goods consumed in the United States, also identified the index traders in the wheat market as the primary cause of the disruption in the market: “Overall, we believe that the root cause of the current dilemma is a lack of regulation upon the largest single participant in the futures markets – the long only commodity index.” The ABA wrote to the CFTC:

“[T]he commodity exchanges have moved away from their original intent – to allow producers to sell their product in a transparent, regulated manner to physical users of the commodity. ABA is concerned that traditional market participants are being pushed out of the market – in favor of more non-traditional, new market participants that are essentially using the commodities market as a financial instrument.”<sup>229</sup>

**National Corn Growers Association.** The National Corn Growers Association (NCGA) also participated in the 2008 CFTC forum. The corn market has also experienced an increase in basis and a number of recent occasions when there has been a lack of convergence, although not as frequent or severe as in the wheat markets.<sup>230</sup> The NCGA also believes that the significant presence of commodity index traders in the grain markets has contributed to the problems of increasing basis and lack of convergence in these markets:

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<sup>227</sup> Statement of the National Grain and Feed Association to the Commodity Futures Trading Commission, April 22, 2008. (Exhibit 8).

<sup>228</sup> *Id.*

<sup>229</sup> Letter from American Bakers Association to The Honorable Walt Lukken, Commodity Futures Trading Commission, May 7, 2008. (Exhibit 9).

<sup>230</sup> Since 2005, index traders have held between 20 and 30% of the total long open interest in the corn futures market.

“It is NCGA’s opinion that the large funds are having an overwhelming influence on the futures markets and are ‘non-commercial traders.’ Frequently, we see dramatic shifts in the futures market that have no substantiated fundamental drivers. While we do not want to drive the index and hedge funds from the market, they should be treated for what they are, ‘speculators.’ I realize this flies in the face of some CFTC decisions, but I believe to truly be classified as a hedge, an entity must have a cash commodity position. NCGA realizes that the large Index Funds are selling a commodity index and then going long in each of their market basket commodities which could be construed as a hedge. But, they are selling a market basket of futures prices, not a market basket of physical commodities.”<sup>231</sup>

**American Cotton Shippers Association.** The American Cotton Shippers Association (ACSA) provided a similar diagnosis of a number of pricing problems in the cotton futures market.<sup>232</sup> The ACSA stated:

“We simply cannot function in a market with unrestrained volatility unrelated to supply-demand conditions or weather events. The ICE Number 2 Contract is no longer a rational market for price discovery and hedging – its use to the commercial trade has been minimized. It is now an investment vehicle for huge speculative funds that have created havoc in the market unimpeded by fundamentals or regulation. It is a market overrun by cash precluding convergence of cash and futures prices, hedging, and forward contracting – a market lacking an economic purpose – a market not contemplated by the Congress when it authorized futures trading of agricultural commodities.”<sup>233</sup>

**American Farm Bureau Federation.** The American Farm Bureau Federation, “the national’s largest general farm organization and the representative of millions of farmers and ranchers in every state in the nation,” expressed the same views regarding the cause of the recent lack of convergence in the grain markets:

<sup>231</sup> Statement of Garry Niemeyer, National Corn Growers Association, Commodity Futures Trading Commission Agricultural Markets Roundtable, April 22, 2008. (Exhibit 10).

<sup>232</sup> Since 2005, index traders have held between 25 and 40% of the total long open interest in the cotton futures market.

<sup>233</sup> Comments of American Cotton Shippers Association to Commodity Futures Trading Commission on Speculative Disruption In Cotton Futures Contract, April 22, 2008. (Exhibit 11).



“Trading activity by funds is certainly one of the contributing factors generating high futures prices for commodities. Ordinarily, this would appear to be positive for agriculture. But if the futures markets do not converge with cash markets, there is little information on what real price levels should be either for producers or consumers of the commodity in question. With convergence, even if futures market prices fall precipitously in the delivery month, there are still economic signals being sent that producers can respond to. Without convergence, these trades become just so much froth.

“In mid-March [2008], index funds represented approximately 42 percent of the open interest in Chicago wheat, meaning that roughly two out of every five outstanding contracts were held by funds with limited need to trade on supply and demand fundamentals – they simply buy and hold. The result was a disconnect of the cash price (traditionally based on futures as a means of price discovery) from the high of the futures market. Forward contracting virtually ceased.”<sup>234</sup>

**Bunge North America.** In its comments to the CFTC on its 2006 proposal to create what is now the Commitment of Index Traders Report, Bunge North America, Inc. (“Bunge”), one of the largest grain processors and marketers globally, provided the CFTC with several observations about the effect of index trading in the Chicago wheat futures market. Bunge described the issue for the CFTC as follows:

“The growth in commodity funds and the corresponding growth in financial hedge positions has created in some physical commodity futures markets an investment class that is large and non-responsive to economic conditions in the underlying cash market. This phenomenon perhaps is most readily apparent in trading in the nearby December futures for soft red wheat at the Chicago Board of Trade, where traditional basis relationships have eroded and the price discovery and risk management utility of the wheat futures contract is in question. . . .

“The most noteworthy market from a negative consequences perspective is in the CBOT soft red wheat futures market. It is increasingly the view among traditional commercial

<sup>234</sup> Statement of the American Farm Bureau Federation to the Commodity Futures Trading Commission, Public Meeting to Discuss Recent Events Affecting The Agriculture Commodity Markets, April 22, 2008. (Exhibit 12).

market participants that the index fund position are not necessarily market liquidity providers, but are rather takers of liquidity, as they generally do not trade on cash market fundamentals.”<sup>235</sup>

#### 4. Recent Market Analyses

Several recent articles by market analysts, investment advisors, and academic scholars have also examined the impact of the increasing presence of index trading in a number of commodity markets on futures and cash prices for those commodities.

**Vanguard Investment Counseling & Research.** A 2007 paper prepared by Vanguard Investment Counseling & Research reported that the swell of money into commodity index instruments had diminished the returns for index traders holding commodity futures tied to those indexes.<sup>236</sup> The Vanguard analysis contended that the increasing number of index-linked trades in the commodity futures markets had actually changed the structure of those markets:

“Another recent influence on term structure in the commodities markets is money flowing into long-only commodity index-linked products. These passive investments are consistently rolling out of expiring nearby contracts into the second-month contract. The resulting strong demand for second-month contracts pushes up prices. If strong enough, such demand could influence the term structure, as longer-term contract prices increase relative to short-term (nearby) contract prices.”<sup>237</sup>

<sup>235</sup> Letter from Thomas J. Erickson, Vice President Government & Industry Affairs, Bunge North America, Inc., to CFTC, Re: Comprehensive Review of the Commitment of Traders Reporting Program (71 F.R. 119 (June 21, 2006)). (Exhibit 13).

Although all of these commenters identified commodity index traders as a major disruptive force in the grain market, they provided a variety of suggestions as to the best way to address this problem. Some recommended that the CFTC not grant any additional exemptions from position limits. Others recommended that the CFTC not only stop granting new exemptions, but also impose stricter position limits on all index traders. Some recommended increasing the margin requirements for index traders. Some recommended additional transparency and study.

<sup>236</sup> Vanguard, *Understanding Alternative Investments: The Role of Commodities in a Portfolio*, Vanguard Investment Counseling & Research, August 2007.

<sup>237</sup> *Id.*, at p. 13. Vanguard reported that returns from commodity indexes over the period, 1970 to 2006, had largely been driven by the rise in energy prices, and that the indexes most heavily weighted towards energy had therefore performed better. “Since the introduction of energy futures contracts in 1983, total returns have been driven not by a general rise in commodity prices but by the strong performance of the energy sector.” *Id.*, at p. 4. Vanguard warned not to expect a continuation of these returns, because the structure of the energy markets had been shifting away from backwardation and into contango, which most likely would result in a negative return. “Unfortunately, there is evidence that the roll return is declining or even disappearing in markets where it traditionally has been strongest (such as energy futures

Vanguard also advised that it expected returns from commodity indexes to be lower in the future:

“A large contributor to *differences* in commodity futures returns is the return derived from rolling futures contracts before they expire. This roll return is positive when futures markets are backwardated and negative when markets are in contango. Many markets (such as those for energy contracts) have been consistently backwardated in the past. However, probably in part because of large-only investor inflows, these markets were in contango beginning in 2004. Consequently, over the next few years, we do not expect average returns from a long-only passive commodity investment to be as high as they have been in the past. . . . We caution against making an allocation [to commodities] on the basis of an extrapolation of historical commodity returns.”<sup>238</sup>

**Mellon Capital Management.** A 2008 paper issued by Mellon Capital Management (MCM) presented a similar analysis.<sup>239</sup> MCM also found that the increasing amount of commodity index trading likely had shifted the structure of the futures markets. Noting that the total amount of index trading in futures markets had ballooned from “less than \$10 billion in 2001 to well over \$200 billion in 2008,” MCM observed that these investors “are almost entirely long and will tend to bid up the price of futures, potentially contributing to contango.”<sup>240</sup> MCM presented data (this data is displayed in slightly different format in Figure 41) showing the increase in contango over the past 10 years in a number of commodities that are included in index funds.

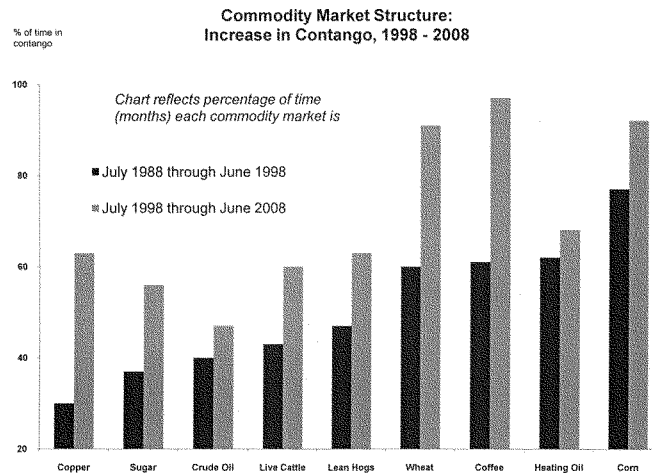
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markets).” *Id.*, at pp. 11-12. See also, PSI, *The Role of Market Speculation in Rising Oil and Gas Prices*, June 2006, at pp. 13-14.

<sup>238</sup> *Id.*, at p. 13. (emphasis in original).

<sup>239</sup> Maria Riddle, *The Role of Commodities in a Modern, Diversified Portfolio*, Mellon Capital Management, November 2008.

<sup>240</sup> *Id.*



**Figure 41.** The market structure for many commodities included in index funds has changed significantly over the past 10 years. Data source: MCM.

MCM concluded that the resulting increase in futures prices was not likely to produce attractive returns: “Given the historical track record of commodities as a volatile ‘path to nowhere,’ there is little reason to expect a return in excess of cash over the long term. The increasing prevalence of contango markets (upward sloping forward price curves) reinforces this view for today’s futures investor.”<sup>241</sup>

**The Petroleum Economics Monthly.** In the March 2009 edition of *The Petroleum Economics Monthly*, Philip Verleger, a noted oil economist, found the increase of investments in commodity index instruments had a significant effect on price spreads in the crude oil futures market.<sup>242</sup> His explanation of the effects of purchases of large

<sup>241</sup> *Id.*, at p. 5. MCM also stated: “Nothing in the long-term history of commodity prices – up to and including recent experience – suggests that, as a group, they will produce equity-like returns going forward.” *Id.*, at p. 8. With respect to spot returns, MCM noted that commodity spot prices, in real terms, “are pretty close to where they were in 1900.” For corn, crude oil, copper, silver, and cattle, MCM found that “as recently as 1999, the cumulative inflation-adjusted returns for all five commodities were negative when measured over the previous century.” *Id.*, at p. 2. MCM nonetheless concluded that it could be worthwhile for an investor to purchase commodity indexes to diversify a portfolio and provide a hedge against inflation.

<sup>242</sup> Philip K. Verleger, Jr., *The Great Glut: The Influence of Passive Investors*, *The Petroleum Economics Monthly*, Volume XXVI, No. 3, March 2009. Mr. Verleger also found there was no correlation between the weekly flow of money into or out of energy and agricultural futures contracts due to commodity index traders and the weekly changes in the spot price of those commodities.

amounts of futures contracts by index traders and other speculators on the price spreads in the crude oil futures market matches the explanations provided to the Subcommittee by grain traders and grain market analysts on the effect of commodity index trading on the price spreads in the wheat futures market.

“[T]here is very, very convincing evidence that firms in the oil industry respond to financial incentives to hold inventories. Inventories increase when markets are in contango. Inventories are liquidated when markets are in backwardation. The rate of acquisition or liquidation depends on the magnitude of the contango or backwardation. The degree of contango or backwardation is measured by the returns to storage.

“These findings describe the market’s current dynamic. The market cycle starts with investment in futures by speculators, *peakies*, and those seeking to diversify portfolios. Buying by these individuals tends to lift forward prices, reducing backwardation or increasing contango.”<sup>243</sup>

Mr. Verleger warned that when passive investments become large enough – such as when they constitute one-half of the open interest in a market, as he believes they did in the crude oil market at the time of his analysis – the size of these positions can “overwhelm the market” or “invite a squeeze.”<sup>244</sup> He recommended that the CFTC and the

<sup>243</sup> *Id.*, at p. 25. Mr. Verleger uses the term “peakies” to refer to persons who believe that the global annual production of crude oil has peaked or will soon reach a peak. In testimony before the Congress in 2006, former Chairman of the Federal Reserve Alan Greenspan offered a similar analysis regarding the effects of increasing investments from hedge funds and other institutional investors on commodity prices:

“[I]ncreasing numbers of hedge funds and other institutional investors began bidding for oil [and] accumulated it in substantial net long positions in crude oil futures, largely in the over-the-counter market. These net long futures contracts, in effect, constituted a bet that oil prices would rise. . . . With the demand from the investment community, oil prices have moved up sooner than they would have otherwise. In addition, there has been a large increase in oil inventories.”

Statement of Alan Greenspan, *Oil Depends Upon Economic Risks*, Hearing before the Senate Committee on Foreign Relations, June 7, 2006. See also Staff Report of the Senate Permanent Subcommittee on Investigations, *The Role of Market Speculation in Rising Oil and Gas Prices: A Need to Put the Cop Back on the Beat*, June 27, 2006, at pp. 7, 13 (“[T]he large purchases of crude oil futures by speculators have, in effect, created an additional demand for oil, driving up the price of oil for futures delivery in the same manner that additional demand for contracts for the delivery of a physical barrel today drives up the price for oil on the spot market. . . . [T]he influx of speculative dollars appears to have altered the historical relationship between price and inventory, leading the current oil market to be characterized by both large inventories and high prices.”)

<sup>244</sup> Philip K. Verleger, Jr., *Passive Investors Are “Roiling” Markets*, *The Petroleum Economics Monthly*, Volume XXVI, No. 2, February 2009, at p. 25. Mr. Verleger also found that purchases of futures contracts by commodity index traders can be beneficial if they result in an increase in the amount of oil in storage and do not distort the market. “Price volatility tends to decline as

exchanges enforce position limits to prevent this type of disruption to the markets resulting from index traders. “We suggest that regulators and the exchanges might need to intervene in trading activity, perhaps by enforcing rigid position limits in some contracts. Failure to do so could make one or more contracts irrelevant to the world market.”<sup>245</sup>

**Institute for Agriculture and Trade Policy.** In 2008, the Institute for Agriculture and Trade Policy (IATP), a farm-oriented research organization based in Minneapolis, issued a paper which examined the role of index trading in the runup of agricultural commodity prices from 2006 and 2008.<sup>246</sup> The Institute described the problem in part as follows:

“As prices have become more volatile and convergence less predictable since 2006, the futures market has lost its price discovery and risk management functions for many market participants. According to the FAO [Food and Agriculture Organization of the United Nations], as of March 2008, volatility

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inventories rise. Higher stock levels also tend to moderate upward pressure on prices. Thus the increase in inventories almost certainly augers a period of lower prices, quite possibly much lower prices.” Philip K. Verleger, Jr., *Giving Credit Where Credit is Due: The Stabilizing Influence of Passive Investors*, Notes at the Margin, Volume XIII, No. 16, April 20, 2009, at p. 1.

<sup>245</sup> *Id.*, at p. 14. Mr. Verleger has discussed the impact of commodity index trading upon the commodity markets in several of his weekly and monthly newsletters going back to January 2005. Although he has typically found a variety of other factors primarily responsible for the behavior of crude oil spot prices during this period, Mr. Verleger has also consistently found that index traders have increased the price of crude oil futures contracts. See, e.g., Philip K. Verleger, Jr., *The Influence of Index Traders on Oil Prices*, The Petroleum Economics Monthly, Volume XXV, No. 3, March 2008, at p. 24 (“The results . . . suggest that buying by index funds has promoted additional forward sales by noncommercial and commercial market participants. Although we cannot produce the results of statistical causality tests to confirm this view, our hypothesis is that buying by index fund traders has lifted forward prices. The rise in forward prices has then been seen as an increasingly good opportunity for commercial traders to hedge by selling forward.”); Philip K. Verleger, Jr., *Commodity Investors: Trying to Squeeze a Barrel into A Pint Jar*, The Petroleum Economics Monthly, Volume XXIII, No. 10, October 2006, at p. 15 (“The evidence presented below suggest that much, if not all, of futures purchases by commodity investors has been offset by inventory accumulation. . . . What happens if investors seeking to put money into commodities cannot find counterparties? The obvious answer is the forward price will be bid up until the investors give up or a counterparty sells. We suggest the forward price curves for gasoline and heating oil have been distorted by this process. Furthermore, this bidding has influenced forward ‘cracks’ (the difference between the future price of products and the future price of light sweet crude.”); Philip K. Verleger, Jr., *Commodity Investors: A Stabilizing Force*, The Petroleum Economics Monthly, Volume XXIII, No. 3, March 2006, at p. 14 (“In summary, the introduction of investors in physical commodities has altered the economics for holding crude oil. It is now profitable to build and hold crude oil inventories.”); Philip K. Verleger, Jr., *Are Oil Markets Entering Yet Another “New Era”?*, The Petroleum Economics Monthly, Volume XXII, No. 7, July 2005, at p. 1 (“The current new era is marked by the entry of long-term investors, who have pushed forward crude prices to record levels.”); Philip K. Verleger, Jr., *Inflating the Commodity Bubble: Impact of Pension Fund Investment on Oil Prices*, The Petroleum Economics Monthly, Volume XXII, No. 1, January 2005.

<sup>246</sup> Institute for Agriculture and Trade Policy, *Commodities Market Speculation: The Risk to Food Security and Agriculture*, November 2008, available at [www.iatp.org](http://www.iatp.org).

in wheat prices reached 60 percent beyond what could be explained by supply and demand factors.”<sup>247</sup>

In addition to the problems that higher futures prices, price volatility, and poor price convergence cause for farmers and agricultural businesses, IATP noted that these pricing problems have global implications: “The Agribusiness Accountability Initiative (AAI) stated that ‘massive commodity market speculation ... has pushed the prices of wheat, maize, rice and other basic foods out of the reach of hundreds of millions of people around the world.’”<sup>248</sup>

IATP called commodity index funds “the elephant in the room” due to the “huge amount of money invested through them and the price volatility that results from index fund ‘bets.’”<sup>249</sup> IATP explained how these funds have a major impact on futures markets:

“Perhaps the most crucial loophole is the one that exempts financial speculators from the speculation position limits of commercial hedgers, provided that the speculator ‘swap’ the futures contract through a middleman ... which would then itself seek to sell the contract it had just bought to spread its risk. ... The [commodity index] funds are legally bound by their prospectus to trade to maintain this fund composition balance, regardless of the supply and demand fundamentals in agricultural markets. ... The underlying fundamental for these funds is not the supply and demand of physical commodities ... but the prospectus formula and profit target. ... While it is generally agreed that some speculative capital is necessary for the effective operation of commodities futures and options markets, it does not follow that the amount of capital must be unbounded for futures and options trading to carry out its price discovery and risk management functions.”<sup>250</sup>

Among other steps to rein in excessive speculation in the commodity markets, IATP recommended establishing position limits on U.S. exchanges and banning foreign commodity exchanges from

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<sup>247</sup> *Id.*, at p. 5.

<sup>248</sup> *Id.*, at p. 3.

<sup>249</sup> *Id.*, at p. 7.

<sup>250</sup> *Id.*, at pp. 7-8.

operating in the United States unless they also establish and enforce position limits for “financial speculation.”<sup>251</sup>

**University of Illinois Analyses.** In a series of papers published over the past two years, Professor Scott Irwin and colleagues at the University of Illinois thoroughly documented and analyzed the recent convergence problems in the wheat, corn, and soybean markets, but did not find that index trading played a major role.<sup>252</sup>

In a 2007 paper, Professors Irwin, Garcia and Good found that the several instances in which the corn and soybean markets experienced a lack of price convergence represented “[a] picture . . . of weakness, but not failure.”<sup>253</sup> They believed these price convergence failures resulted from “a unique situation” involving extraordinarily high barge rates along the Illinois River, futures prices that failed to reflect fundamental values in the cash market, and “a large carry in the futures market that influenced delivery and load-out decisions.”<sup>254</sup> A large carry, they noted, provides merchants with an incentive to store the commodity for later delivery, when futures prices are higher. They explain that, as more of the commodity is stored and less is marketed, there are fewer transactions to force price convergence.

With respect to poor price convergence in the wheat market, the professors found that the performance of the Chicago wheat futures contract was so “dismal” that it constituted “failure to accomplish one of

<sup>251</sup> *Id.*, at p. 11.

<sup>252</sup> Scott H. Irwin, Philip Garcia, Darrel L. Good, and Eugene L. Kunda, *Poor Convergence Performance of CBOT Corn, Soybean and Wheat Futures Contracts: Causes and Solutions*, Marketing and Research Report 2009-02, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, March 2009; Scott H. Irwin, Dwight R. Sanders, and Robert P. Merrin, *Devil or Angel? The Role of Speculation in the Recent Commodity Price Boom (and Bust)*, February 2009; Dwight R. Sanders, Scott H. Irwin, and Robert P. Merrin, *The Adequacy of Speculation in Agricultural Futures Markets: Too Much of a Good Thing?*, Marketing and Research Report 2008-02, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, June 2008; Scott H. Irwin, Philip Garcia, and Darrel L. Good, *The Performance of Chicago Board of Trade Corn, Soybean, and Wheat Futures Contracts After Recent Changes in Speculative Limits*, July 2007. In addition to extensively documenting the nature and extent of the recent convergence problems in the grain markets, these papers have helped focus much of the analysis and discussion on this issue. Professor Irwin has made presentations to the CFTC on his findings on several occasions. Many of the people interviewed by the Subcommittee staff during this investigation were familiar with these papers.

<sup>253</sup> Irwin, Garcia and Good (2007), at p. 17.

<sup>254</sup> The referenced increase in the carry (i.e., spread between the second and first month futures contracts) in the corn and soybean markets occurred from late 2005 through August 2006. *Id.*, at pp. 10-17. There was a similar increase in the carry in the Chicago wheat market during this period.



the fundamental tasks of a futures market.”<sup>255</sup> “This prolonged period of weak basis,” they elaborated, “suggests that the contract is not providing a hedging mechanism, may not be providing proper price signals to wheat producers and consumers, and may be reducing the effectiveness of crop revenue insurance products based on CBOT wheat futures prices.”<sup>256</sup> They identified the following factors as responsible for the lack of price convergence: (1) soft red winter wheat futures prices that “exceeded fundamental value” in reference to the cash market; (2) a large carry; and (3) insufficient deliveries. As with corn and soybeans, the large carry served to encourage storage rather than deliveries, resulting in fewer transactions to force price convergence.<sup>257</sup>

In this paper, Professors Irwin, Garcia, and Good identified increased speculation as one of the key factors responsible for the larger carry in these markets during this period: “The larger carry in the corn and soybeans markets in the past year likely resulted from large crop

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<sup>255</sup> *Id.*, at pp. 10, 17.

<sup>256</sup> *Id.*, at p. 17.

<sup>257</sup> Professors Irwin, Garcia, and Good also believed that the decline of Chicago as a center of commerce in wheat, particularly soft winter wheat, and the use of the Chicago wheat contract as a global benchmark for wheat prices, were partially responsible for the convergence failures. They recommended changing the terms of the Chicago wheat futures contract to encourage and facilitate deliveries of wheat, but also more research “to investigate the need for and development of a new contract that more precisely reflects world supply and demand conditions for wheat.” *Id.*, at p. 18. As they note, however, Chicago has not been a major center of wheat commerce for nearly a century. In 1926, a Federal Trade Commission (FTC) Report on the Grain Trade noted “the tendency toward a loss by Chicago of its primacy as a market for the physical handling of grain, especially as regards wheat, while maintaining its dominant position in futures. An increasing quantity of grain that never goes to Chicago is hedged in Chicago futures.” FTC, *Report on the Grain Trade*, Vol. VII, Effects of Futures Trading, at p. 286 (1926). The FTC Report recommended additional delivery points for the contract: “Outside deliveries might be considered a further logical step in making the national market for future trading, so far as practicable, also national in some sense as regards the facilities offered for delivery on its futures.” *Id.* A 1953 analysis by Professor Holbrook Working of the effectiveness of hedging techniques in the wheat futures market also referenced the longstanding decline of the cash wheat market in Chicago. Professor Working stated that he used price quotations from the Kansas City markets rather than Chicago “because changes in the major wheat-producing areas and in the normal lines of movement of the commodity have left Chicago with a vestigial spot wheat market that no longer affords a good source of spot price quotations.” Holbrook Working, *Futures Trading and Hedging* (1953), reprinted in *Selected Writings of Holbrook Working*, (1977), at p. 145. In 1961, Stanford University Professor Roger Gray commented, “It is somewhat misleading to speak of our three major wheat futures markets. Chicago is the major futures market, carrying about three-fourths of all the open contracts on all United States wheat futures markets in the postwar period. Kansas City and Minneapolis have divided nearly all of the remainder in a ratio of about two to one in favor of Kansas City. . . . Yet Chicago is a cash wheat market of only secondary importance . . .” Roger W. Gray, *The Relationship Among Three Futures Markets*, Food Research Institute Studies, Vol. II, No. 1 (February 1961), at p. 22 (available at [farmdoc archives](#)). The issue, therefore, is not whether Chicago has declined as a location for the wheat trade – it clearly has – but what additional factor has arisen within the past few years that, together with weaknesses in the contract, now threatens the very existence of the Chicago wheat contract as a useful hedging instrument.

inventories, increased commercial long hedging in deferred contracts by exporters and ethanol producers, *and the large increase in speculative interest in owning corn and soybean futures.*"<sup>258</sup> The paper identified index traders as one of the factors underlying this increase in speculation in the grain markets. Although it identified "a particular concern" that "the huge inflow of commodities investment has raised prices, at least temporarily, to higher levels that can be justified by economic fundamentals," it did not evaluate or address this specific concern in more detail.

In a 2009 paper, Professors Irwin, Garcia, Good, and Eugene Kunda found that, from late 2005 to 2009, the wheat, corn, and soybean markets were plagued by "extended periods" in which there was a lack of price convergence, although corn and soybeans had not performed as poorly as wheat. "Performance has been consistently weakest in wheat, with futures prices at times exceeding delivery location cash prices by \$1/bu., a level of disconnect between cash and futures not previously experienced in grain markets."<sup>259</sup> Again, the 2009 paper identified the large carry in these markets as the root cause of the convergence problem. "In sum," the paper stated, "[this] analysis pinpoints an unusually large carry in nearby spreads as the main factor driving poor convergence performance of corn, soybean, and wheat futures contracts in recent years. The large carry led to a historically large wedge between futures and cash prices and substantial declines in hedging effectiveness."<sup>260</sup>

<sup>258</sup> *Id.*, at p. 13 (emphasis added).

<sup>259</sup> Irwin, Garcia, Good, and Kunda (2009), at p. 1.

<sup>260</sup> *Id.*, at p. 5. Professor Irwin and his colleagues found that all contracts performed poorly whenever the price spread between the second and first futures contracts (i.e., the carry) exceeded 80% of full carry. They explained how a large carry impairs convergence:

"Large carry markets contribute to lack of convergence by 'uncoupling' cash and futures markets when futures prices are above cash prices. The delivery instrument for corn and soybeans is a shipping certificate, while the delivery instrument for wheat was a warehouse receipt until recently when it was changed to a shipping certificate (starting with the July 2008 contract). Those longs who receive certificates or receipts from shorts in the delivery process are not required to cancel those instruments for shipment. The instruments can be held indefinitely with the holder paying 'storage' costs at the official rates specified by the CBOT in contract rules. The taker in delivery (the long) may choose to hold the delivery instrument rather than load out if the spread between the price of the expiring and next-to-expire futures contracts exceeds the cost of owning the delivery instrument. Therefore, as the magnitude of the nearby spread exceeds the full cost of carry for market participants with access to low-cost capital, those participants can (and do) stand for delivery but do not cancel delivery certificates or receipts for load out.

Although Professors Irwin and his colleagues again identified the increased carry in the grain markets since 2006 as a major underlying cause of the convergence problems in these markets, they again did not identify the root cause for this increase.<sup>261</sup> Rather, they partially

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“The lack of load out, then, means that deliveries do not result in cash commodity purchases by the taker that would contribute towards higher cash prices and better convergence. Alternatively, a smaller carry in the market and the absence of an ‘abnormal’ return to certificate ownership would motivate participants with long positions to liquidate prior to delivery, putting downward pressure on nearby futures and contributing to better convergence.”

*Id.*, at p. 2.

<sup>261</sup> Professor Irwin and his colleagues rejected index trading as a possible cause for the increase in the price spreads and resulting carry in the market, because they did not find lasting increases in the price differences between the first and second month futures contracts during the five-day roll periods for the S&P GSCI commodity index. For a number of reasons, however, the increase in the second to first month price spreads resulting from increased index trading would not necessarily be manifested during this small window of time.

First, there is no reason to expect that the increase in the spread between the second and first month contracts resulting from index traders would occur only during the five days when the S&P GSCI is rolling futures contracts from the first to the second months. All of the traders in these markets are well aware of when the various funds roll their contracts, and some may avoid trading during any period in which they believed they would have to compete with index traders for the purchase or sale of specific futures contracts. Thus, to a certain extent the increase in trading by index traders during this period may be directly offset by decreased trading by non-index traders during this period. The net increase in demand for futures contracts resulting from index traders, therefore, could be spread out over a much larger time frame than this five-day window.

Second, since 2006, the roll window for the S&P GSCI has represented a decreasing proportion of the total time period in which index-related futures contracts are rolled. Since 2006, most new investments in commodity indexes have been placed into the second-generation indexes. The second-generation commodity indexes rely on futures contracts that are more distant than those in the first-generation funds, and roll less frequently in order to avoid or reduce the losses from rolling contracts in contango markets.

Third, as discussed previously, other intermonth spreads – including the spread between the third and second month contracts – have also increased over the past few years. Once a futures contract reaches expiration, what had been the spread between the third and second month futures contracts then becomes the spread between the second and first month contracts. Hence, much of the increase in the spread between the second and first months since 2006 is directly related to the prior increase in the spread between the third and second month contracts rather than the rolling of contracts. Hence, much of the increase in the 2-1 spreads has already occurred by the time the S&P GSCI contracts are rolled.

Fourth, investments tied to commodity indexes directly affect the intermonth price spreads through their initial investments as well as through the periodic rolling of contracts. The initial purchase of a futures contract by an index trader, by itself, will increase the difference in price between the second month contract and the first month contract, and between more distant contracts. Because these index traders are passive, meaning they hold onto the futures contracts for long periods of time and do not subsequently buy or sell on the basis of market supply and demand fundamentals, there is no subsequent selling of these contracts prior to the roll that would lower these spreads. Hence, by the time a roll window arrives, the spread already would have been elevated to a certain degree due to the buy and hold strategy pursued by these index traders. It is not possible to quantitatively determine or estimate the relative contribution of the initial purchase and the subsequent roll to the overall level of the price spread. To the extent that the subsequent roll does not actually increase the price spread, however, it may still serve to maintain that spread and prevent it from falling as firms seek to “sell the spread” in order to recover the costs of storing the commodity over the time period represented by the spread. This type of effect also would not be observable in any correlation between price and position.

attributed the failures of convergence to “structural issues related to the delivery process” – meaning the fact that Chicago is no longer a principal location for commerce in wheat – and recommended that the contract delivery point be moved to New Orleans to increase the number of cash transactions near contract expiration and encourage price convergence.

### 5. Basic Futures Market Theory: Impact of Speculation on Price

Finally, basic theory about how commodity markets work supports the finding that commodity index trading is a primary cause of the pricing problems in the Chicago wheat market.

All of the traders in commodity futures markets, including speculators, commercial hedgers, and others, affect the price of commodity futures contracts. A bid to purchase or an offer to sell a particular futures contract at a particular price that is made by a speculator has the same effect upon the market as an identical bid or an offer from a commercial hedger. It is the interactions between all of the buyers and sellers which determine market prices, not theoretical models of what the appropriate price should be given the fundamentals of supply and demand. G. Wright Hoffman, one of the first economists to extensively analyze trading on the futures markets, observed, “Fundamental market information determines prices only through the opinions and actions of traders composing the market.”<sup>262</sup> Similarly,

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The 1967 USDA Economic Research Service study on speculation, margins, and prices emphasized the importance of examining a wide time frame rather than a discrete trading window when analyzing the effect of speculation on price. “If one assumes that the principal, measurable price effect of speculation is not caused by the holding of speculative position over time, but, instead, by the immediate market reaction to the transaction (buying or selling) itself, then no combination of measures which reflect merely the net change in ‘ownership’ of open contracts can adequately explain the real price effect of speculation.” *Margins Speculation and Prices in Grains Futures Markets*, at p. 71. The USDA advised taking a broad approach: “[A]ppropriate examination of speculative activities and related price behavior over a wide sample of market situations would identify circumstances under which speculation quite likely was a measurable price-making factor.” *Id.*, at 73.

<sup>262</sup> G. Wright Hoffman, *Future Trading Upon Organized Commodity Markets in the United States*, (University of Pennsylvania Press, 1932), at p. 259. In 1941, the USDA published Mr. Hoffman’s study of grain prices and the futures markets over a 15-year period beginning in 1923, the year in which data on the positions of traders first became available under the Grain Futures Act of 1922. USDA, *Grain Prices and the Futures Market: A 15-year Survey, 1923-1938*, Technical Bulletin No. 747, January 1941 (G. Wright Hoffman, consulting economist). Mr. Hoffman’s USDA study concluded that “when the trading of market leaders results in large purchases or sales within comparatively brief periods of time, it is capable of causing the price to move with the trading – if purchases, upward; if sales, downward.” *Id.*, at p. 49. The USDA found that when the net positions of the five largest speculators in the Chicago wheat futures market were “combined and considered as a group their positions as well as their large trades reveal a pronounced price relationship. They suggest in even stronger terms than for earlier

Professor Holbrook Working writes, “[T]he price of a commodity, of which stocks are held, cannot be determined by an impersonal economic law; it is determined by human judgments, essentially speculative, regarding what those stocks can be sold for at a later time.”<sup>263</sup> Professor Thomas Hieronymus has also observed, “A futures market is not a scholarly seminar in which learned men debate what is, and arrive at, an equilibrium price; it is a game in which businessmen compete, with money at hazard, to establish a market price that works.”<sup>264</sup>

The price of a futures contract reflects the supply of and demand for that contract, as transmitted to the market by the buyers and sellers of the contract. As in any type of market, if there are more buyers than sellers, then the price will rise until there is sufficient incentive for additional sellers to enter the market. It follows, therefore, that if in the commodity futures markets there are more traders, such as speculators, who desire to purchase a futures contract than other traders, such as

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*periods that the trading of these leaders caused prices to move with their trading.”* *Id.*, at p. 52 (emphasis added). Moreover, the USDA found that the larger the speculative trades, the more likely those trades were to affect prices. “[T]he larger the daily net trades by leading operators the more certain it becomes that the prices will respond directly to the trading.” *Id.*, at p. 60.

Mr. Hoffman also contributed to the 1926 report prepared by the Grain Futures Administration (the GFA was the predecessor agency to the Commodity Exchange Authority, which was the predecessor agency to the CFTC) at the request of the U.S. Senate on the causes of the price fluctuations in the wheat market in 1925. The 1926 report concluded, “While this investigation did not reveal any concentrated action for the deliberate purpose of manipulating the market, most of the wide and erratic price fluctuations that occurred in wheat futures at Chicago during the early part of 1925 were largely artificial and were caused primarily, either directly or indirectly, by heavy trading on the part of a limited number of professional speculators.” *Fluctuations in Wheat Futures*, Senate Doc. No. 135, 69<sup>th</sup> Cong., 1<sup>st</sup> Sess., June 28, 1926, at p. 1. It found that “large speculative operations” were “a constant hazard in the market, the force of which may move prices far out of line with the normal and, temporarily, at least, destroy completely the hedging value of the futures market.” The report advised that limits on the size of speculative positions and intraday trading were necessary “if the futures market shall best serve hedgers and others who have need of it in the process of moving grain from the farms of this country to the consumers of this and other countries.” *Id.*, at p. 6.

Fifty-five years after the Senate published this report, Professor Todd Petzel published a critique of the GFA’s study of the events of 1925, observing that the use of statistical techniques for the analysis of market data that were not yet developed at the time of the GFA study did not support the GFA’s conclusions. Professor Petzel’s analysis confirmed the correlation between the purchases by speculators and price changes, but he then stated “it is important that causality not be read into [the fact of correlation]. It is impossible to determine whether price increases (or decreases) during the day caused purchases (or sales) by speculators or the converse.” Todd E. Petzel, *A New Look at Some Old Evidence: The Wheat Market Scandal of 1925*, Food Research Institute Studies, Vol. XVIII, No. 1, 1981, at p. 123 (available at farmdoc archives). Professor Petzel found that “without intraday trading data it is impossible to suggest a causal relationship.” *Id.*, at p. 126. Professor Petzel, therefore, did not disprove the GFA’s finding, but rather rejected it because it could not be proved according to a high degree of statistical certainty with the available data. In the absence of good or sufficient data, however, non-statistical methods are often used to demonstrate the truth or falsity of a hypothesis.

<sup>263</sup> *The Economic Functions of Futures, Markets*, at p. 294.

<sup>264</sup> Hieronymus, at p. 327.

hedgers, who in the normal course of business would sell those contracts, then the price of those futures contracts must rise to attract additional sellers. In this manner an excess of speculative purchases of futures contracts will raise the price of those futures contracts.<sup>265</sup>

It is also well-established that speculative activity is often a major determinant of price spreads. Professor Hieronymus wrote in his classic textbook: "Speculators in futures markets affect prices; they accumulate and liquidate inventory which puts prices above the levels that would otherwise prevail when they are accumulating and puts prices below levels that would otherwise prevail when they are liquidating."<sup>266</sup>

Professor Hieronymus describes in detail how speculators in the grain markets influence the intermonth price spreads in the grain futures markets and thereby affects the deliveries and storage of grain at terminal elevators. He first explains how a terminal elevator determines whether to hold or deliver grain:

"The elevator management must formulate a judgment of the most favorable spread at which it can move its hedges forward and, at a smaller spread, deliver grain. In making this judgment, it looks at existing supplies, supplies to come, demands for use and shipment, and the amount of available

<sup>265</sup> A variety of rationales are sometimes offered to support the contrary view that speculation does not affect futures prices. First, it is sometimes asserted that in an efficient market any deviations from "fundamental value" will quickly disappear as other market participants take advantage of the arbitrage opportunities presented by such deviations. This view presumes that "fundamental value" is an objective reality that all market participants can readily discern. As Hoffman, Working, and Hieronymus and many others have stated, "fundamental value" is not an objective value that exists independently from the market – it is what the market says it is. Hence, there is actually no reason to believe the price of a futures contract should be anything other than what the market currently says it is. Second, it is often asserted that "for every buyer there is a seller." The significance of this fact is unclear; presumably it is intended to mean that the upward pressure placed on the market by the buyers will always be met by an equal and opposite downward pressure placed upon the market by the sellers, thereby implying that price increases cannot be attributed solely to the buyers. This argument is unpersuasive, since it leads to the logical conclusion that prices in any market should be static – in any market there are an equal number of buyers and sellers. Moreover, it is the presence of bids and offers that move prices, not the presence of buyers and sellers; for every bid there is not necessarily a corresponding offer and vice versa. Third, it is often asserted that, because speculators never take delivery, they must eventually engage in a market transaction that is the opposite of the initial transaction – for example, they must eventually sell each futures contract that is purchased – so that there is no net effect from their speculative buying and selling. This analysis ignores the fact that market conditions and prices at the time of the subsequent transaction will be different from the market conditions and prices at the time of the initial transaction, so that the subsequent transaction will not necessarily have an equal and opposite effect upon the market as the initial transaction. Moreover, most hedging does not result in physical delivery. In many commodity futures markets, only 1 or 2% of the transactions result in physical delivery. It cannot be credibly argued that 98-99% of the transactions in a commodity futures market have no effect on price because they do not result in delivery.

<sup>266</sup> Hieronymus, at pp. 145-6.

space. It is a complex judgment, and first delivery day is nearly always a time of intense interest.

“The opposite ends of these futures trades by warehousemen are taken by speculators; they buy the hedges. They pay premiums for the deferred deliveries. If they are to make money the cash price must increase by more than the amount of the premium. They pay, indirectly, the storage that the warehouseman receives indirectly. As the spreads are wide, they are paying more storage than when the spreads are narrow.”<sup>267</sup>

Professor Hieronymus refers to the interaction between large speculators and the terminal elevators as “the delivery game.”<sup>268</sup> Not only do the speculators take the opposite position from the hedgers in the price spreads, but their actions in bidding up the price of the spreads, or conversely, in selling their spread positions, directly affects the amount of the grain stored at the terminal elevators. “Thus, it is the speculators who make the inventory decisions. Inventory is accumulated when speculators are willing to pay enough more for distant contracts than nearby to encourage accumulation and hedging, and inventory is liquidated when speculators will pay little more or even less for the more distant contracts.”<sup>269</sup>

<sup>267</sup> *Id.*, at pp. 159-60. Professor Hieronymus’s observation that speculators who are long the spread are in effect paying for the storage costs of the commodity by the warehouse (or other persons holding warehouse receipts) offers another explanation of why investors in commodity index strategies in a contango market fare so poorly. The monthly roll of the underlying futures in an index fund is in essence the purchase of an intermonth spread – it entails selling the nearby futures and purchasing the longer-term futures. The hedger on the other side of this transaction purchases the shorter-term futures and sells the longer-term futures. By buying the spread from the hedger, the index trader is essentially paying that hedger the storage cost of the commodity over the time span of the spread. These index traders are, in effect, paying for the cost of storage of the commodity while hoping that the price will appreciate by more than the storage cost of that commodity. As shown in the previous section, over the past 50 years, that approach has been an extremely poor strategy in the wheat and corn markets.

<sup>268</sup> *Id.*, at p. 172.

<sup>269</sup> *Id.*, at p. 194. Although there is an extensive body of literature on the effect of speculation on price levels, only a fraction of this literature specifically addresses the effect of speculation on intermonth price spreads. One of the few empirical analyses of this issue was published in 1967 by the U.S.D.A. Economic Research Service, as part of a larger study entitled, “Margins, Speculation, and Prices in Grain Futures Markets.” USDA Economic Research Service, *Margins, Speculation, and Prices in Grain Futures Markets* (U.S. Government Printing Office, 1967) (available at [farmdoc](#) archives). The purpose of the study was “to define and measure speculation and its relation to price fluctuations, and to measure the relation of margin changes to speculation and price movements.” The USDA concluded that speculation played a role in price formation, but it was often impossible to quantitatively measure that contribution even using the best available data. “Original, objective analyses show that speculation explained part of short-term price ranges or changes in most [of] the market situations for which estimating procedures were developed. The relative importance attributable to speculation, compared with other explanatory variables, varied widely, as did its absolute price effect.” *Id.*, at p. 4. The USDA study also examined how the relationship between hedgers and speculators can affect prices. In

In sum, unless there is an independent increase in the supply of futures contracts by commercial hedgers, increased futures purchases by speculators – or index traders – will result in an increase in the price of futures contracts. The basic laws of supply and demand fully apply to the actions of speculators and index traders in the commodity futures market. As speculators or index traders demand additional futures contracts, the price of those futures contracts will increase and the commercial sellers will have an added financial incentive to place their grain into storage. All else equal, therefore, as the demand for futures contracts from index traders increases, the price of those futures contracts can be expected to increase as well.

Whether an increase in demand from index traders will, in fact, result in an increase in futures prices and spreads will depend on additional factors, including the relative balance between the long index investor and short hedgers, and the extent of demand in the cash market. When there is significantly more selling (i.e., short hedging) of futures contracts than speculative buying, the additional purchases of futures contracts by index traders can more readily be absorbed by the market than when the index funds are of comparable size or larger than the short hedgers. When the demand for contracts for future delivery of a commodity from index traders matches or exceeds the supply of the contracts for future delivery, the price of those contracts for future delivery will rise relative to the price of the commodity in the cash market.<sup>270</sup>

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particular, the USDA noted that changes in the balance between the number of speculators and the number of hedgers can influence prices. “We noted that fluctuations in the grain futures markets became marked when long or short aggregate commitments in speculation or hedging became unbalanced, with respect to offsetting positions in the same category. Price stability often occurred when long and short hedging positions were well balanced and when these positions represented approximately an equal share of total open contracts as did holdings by speculators other than spreaders.” *Id.*, at p. 3. The report noted that large purchases of futures contracts by speculators can increase the price spreads in the futures market: “[C]ertain (intra-commodity) spread positions are relatively important in influencing changes in price differences between contracts. Changes in aggregate holdings of spreads by large speculators between contracts within different crop years (e.g., long old crop – short new crop) consistently were closely related to logical, corresponding shifts in price spreads.” *Id.*, at p. 5.

<sup>270</sup> There is no widely accepted way to quantify what an acceptable level or percentage of speculation in a particular market might be. The USDA Economic Research Service’s 1967 study into the effects of speculation on futures prices addressed this point:

“Data limitations precluded our serious consideration of developing or adopting a single benchmark, a ‘speculative statistic’, which could quantify speculation and contribute consistently and rationally to explanations of futures price behavior of an extended period of time. Even if the concept that speculation could be precisely defined by a single statistic is acceptable in theory, such a historical series simply could not have been developed and tested.”



The extent of the demand for the commodity in the cash market also will have a significant influence on the price spreads, basis, and convergence. Price spreads, particularly the spread between the cash and futures price (the basis), will increase when demand in the cash market is weak, and decrease when the demand in the cash market is strong. A strong cash market will raise the cash price relative to the futures price and result in smaller spreads between futures contracts, as the near-term demand for the commodity rises relative to the longer-term demand. Thus, when the cash market is strong enough – as it was in the latter part of 2007 – convergence may occur even when there is a large presence of index trading in the market. When the cash market is weaker than usual – as it was during the second part of 2008 – the demand for futures contracts from index traders will cause the spreads to widen significantly, and price convergence will be impeded.

The problem with the large basis levels and lack of convergence in the Chicago wheat futures market is fully explained by this framework. This framework does not rely on any novel concepts or theories of commodity market behavior. It simply integrates the presence of commodity index traders into well-accepted, basic models of how commodity markets work.

The Commodity Exchange Act does not define the term “excessive speculation,” but rather states that excessive speculation that causes “sudden or unreasonable fluctuations or unwarranted changes in the price of such commodity is an undue and unnecessary burden on interstate commerce in such commodity.” The Act then directs the CFTC to establish limits on trading to diminish, eliminate, and prevent this burden on commerce.

This Report finds there is significant and persuasive evidence that the large amount of commodity index trading due to speculative purchases of index instruments has contributed to “unreasonable fluctuations” and “unwarranted changes” in the price of wheat futures contracts, since the change in the relationship between futures and cash prices in the wheat market is, in large part, due to this index trading rather than the fundamentals of supply and demand in the cash market. Additionally, this Report finds there is significant and persuasive evidence that the change in the relationship between the price of wheat

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USDA, *Margins Speculation and Prices in Grains Futures Markets*, at p. 67 (available on [farmdoc](#) archives). The USDA study concluded that “Price behavior is probably best explained by a number of independent factors acting singly and jointly with one another.” *Id.*, at p. 73.

futures contracts and the price of wheat in the cash market has significantly impaired the ability of farmers, grain elevators, millers, grain merchants, grain processors, and others in the grain industry to use the futures markets to reliably price wheat and manage their price risks, which has imposed significant, additional costs upon these participants in the grain industry. Because there is substantial and persuasive evidence that this level of speculation in the wheat futures market has been a major cause of these unwarranted changes and unreasonable fluctuations, and has imposed an undue burden on interstate commerce, this Report finds that the high level of index trading in the wheat futures market constitutes “excessive speculation” that the Congress directed the CFTC to prevent through the imposition of limits on trading.

## VI. FUTURES PRICES AND CROP INSURANCE

A final issue involves the federal crop insurance program. The evidence shows that artificially high futures prices can result in increased farmer and taxpayer costs through the federal crop insurance program and in inaccurate insurance payouts.

Federal crop insurance is available to farmers who want to cover potential financial losses due to natural perils such as bad weather and crop disease. The federal crop insurance program uses settlement prices from certain futures contracts to determine how much money should be paid to a farmer who has purchased coverage and to set insurance premiums. Futures prices that are higher than justified by the fundamentals of supply and demand in the cash market increase the costs of purchasing crop insurance for farmers as well as for federal taxpayers who share in the cost of those insurance premiums. Futures prices are also used to set both base and harvest prices for certain types of crop insurance. The base price is then used to set revenue guarantees, and the harvest price is used in the revenue calculation. Both prices are included in formulas used to calculate insurance payments made to farmers. The increasing lack of predictability as to the difference between the futures price and the cash price for wheat (the basis) undermines the reliability and effectiveness of the formulas used to calculate insurance payouts, potentially resulting in underpayments or overpayments by the program to the purchasers of federal crop insurance.

### A. Background

#### 1. Development of the Federal Crop Insurance Program

The U.S. Department of Agriculture's (USDA) Risk Management Agency oversees the current federal crop insurance program in conjunction with private insurers. The program was first authorized by Congress in the 1930s after the devastation to farmers and the agricultural community from the Great Depression and the Dust Bowl.<sup>271</sup> Farmers faced losses due to inclement conditions such as

<sup>271</sup> Arthur M. Schlesinger, Jr., *The Crisis of the Old Order 1919-1933* (Houghton Mifflin Company, 1957), at p. 174-175. Net farm income in 1932 was \$1.8 billion – less than one-third what it had been three years earlier. To put this into real terms, it took 16 bushels of wheat – more than the average yield of a whole acre – for a farmer to buy his children a pair of \$4 shoes.

drought, flooding, hail, freezes, and disease.<sup>272</sup> The crop insurance program was created as a way for the government to help protect farmers from future losses. In 1938, Congress created the Federal Crop Insurance Corporation to help manage the program.<sup>273</sup> Initially, the program was started as an experiment, and crop insurance coverage was mostly limited to major crops in the main producing areas. The program was not heavily utilized during its first 50 years. During this time, participation in the program was low, while losses were high.

In 1980, the Federal Crop Insurance Act was passed, expanding the insurance program to more crops and regions of the country.<sup>274</sup> The Act contained a number of provisions that were designed to encourage more farmers to participate in the crop insurance program. For example, Congress eliminated limitations in the Federal Crop Insurance Corporation's ability to offer reinsurance to private companies. While more farmers utilized the program after the new Act was passed, many chose not to participate because they believed that if a disaster were to occur that affected their crops, the Federal Government would come through with disaster assistance as it had so many times before. The low participation rate in the crop insurance program led to Congress issuing a number of ad hoc disaster assistance bills following major disasters in the 1980s and early 1990s.

In 1994, the crop insurance program was reformed yet again, with enactment of the Crop Insurance Reform Act, which effectively eliminated ad hoc disaster assistance payments.<sup>275</sup> Initially, the 1994 Act made participation in the crop insurance program mandatory for farmers to be eligible for other USDA benefits such as payments under price support programs. This requirement increased program participation. In 1996, Congress repealed the mandatory participation requirements, but farmers who accepted other federal benefits were required to purchase crop insurance or waive their eligibility for any disaster benefits that might be made available during that crop year.

<sup>272</sup> Douglas R. Hurt, *The Dust Bowl: An Agricultural and Social History*, (Nelson-Hall, 1981), at p. 30-31. In 1931, a bumper crop of wheat accompanied by drought brought economic disaster to the southern Great Plains. In the Dust Bowl states, the price of wheat fell from an average of \$.99 per bushel in 1929 to \$.34 in 1931.

<sup>273</sup> The Federal Crop Insurance Corporation was created by Congress in legislation that was passed on February 16, 1938 (7 U.S.C. 1501).

<sup>274</sup> The Federal Crop Insurance Act of 1980, P.L. 96-365.

<sup>275</sup> The Crop Insurance Reform Act of 1994, P.L. 103-354.

In 2000, in another bid to increase program participation, Congress authorized USDA to start subsidizing the premiums farmers paid to obtain crop insurance. These taxpayer subsidies today cover more than 60% of the premium costs. Currently, farmers pay about 41% of the amount needed to cover insured losses.<sup>276</sup> According to The Center for Agricultural and Rural Development at Iowa State University, this large subsidy means that most farmers will get substantially more back from the program than they pay into it. The Center estimated that the premium subsidy is large enough that the average farmer can expect a rate of return of 143% for the premium paid.<sup>277</sup>

Today, about 58% of U.S. grain farmers participate in the crop insurance program which has grown to become the largest single source of financial protection to farmers.<sup>278</sup> According to the 2008 USDA Performance and Accountability Report, in 2008, USDA's Risk Management Agency provided more than \$88 billion of Federal crop insurance protection to farmers.<sup>279</sup> The premiums continue to be heavily subsidized. In 2006, the crop insurance program cost taxpayers approximately \$2.5 billion, or \$3.31 for each dollar paid out.<sup>280</sup>

## 2. How the Program Works

USDA offers crop insurance through its Risk Management Agency (RMA). RMA administers the crop insurance program in partnership with private insurance companies. Farmers purchase crop insurance from an approved private insurance company that is authorized to sell the policy on behalf of USDA. The farmer enters into a contract with the insurance company to insure the eligible acreage of a particular crop planted in a particular county. The farmer pays a premium for the insurance, but part of the cost of the premium is paid for with taxpayer dollars. Insurance is provided on a crop-by-crop and county-by-county basis. RMA acts as a reinsurer for a portion of all federal crop insurance policies, meaning it acts as an insurer for the private insurance companies that provide direct coverage to farmers.

<sup>276</sup> Babcock, Bruce A. and Hart, Chad, E. *Iowa Ag Review*, summer 2006, Volume 12, No. 3.

<sup>277</sup> *Id.*

<sup>278</sup> According to the 2002 USDA Agricultural Resource Management Survey, nearly 58% of farms that earned most of their income from grains, oilseeds, dry beans, or peas purchased crop insurance.

<sup>279</sup> U.S. Department of Agriculture 2008 Performance and Accountability Report (November 17, 2008) at p. 3.

<sup>280</sup> Babcock, Bruce A. and Hart, Chad, E. *Iowa Ag Review*, summer 2006, Volume 12, No. 3.

Under the federal crop insurance program, the private insurer agrees to indemnify the farmer for losses that occur during the insured crop year. The insurer has the backing of USDA's RMA and receives reimbursement for a portion of the administrative costs associated with underwriting the policy. Additionally, USDA and the insurer share a percentage of the risk of loss and opportunity for gain associated with each insurance policy written. According to USDA, all eligible acreage must be insured to reduce the potential for adverse selection against the insurance provider.<sup>281</sup>

**Insurance Options.** USDA offers farmers a number of different insurance options for hundreds of crops, including wheat, corn, and soybeans. Options include policies that protect against loss of yield and loss of revenue. Based upon their needs, farmers can choose the policy option that is best for them. Crop coverage availability is determined by county, but coverage is broadly available for most crops in their core growing areas.<sup>282</sup> Coverage availability differs by location and varies by policy type. For example, Crop Revenue Coverage policies for wheat are available in 2,354 counties across 40 states, while corn coverage is available in 2,517 counties across 47 states, and soybean coverage is available in 1,986 counties across 32 states. Revenue Assurance wheat coverage is available in 1,181 counties across 17 states, while corn coverage is available in 1,528 counties across 19 states, and soybean coverage is available in 1,388 counties in 19 states.<sup>283</sup>

There are two basic categories of federal crop insurance: "yield based" insurance determined according to a farmer's actual production history, and "revenue based" insurance determined according to the farmer's expected crop income. Each category offers a number of different insurance plans for farmers to choose from.

Under yield based plans, the farmer chooses a level of yield to insure, typically from 50% to 75% of the farmers' average crop yield, but up to 85% in some areas. The farmer also selects the percent of the predicted price he or she wants to insure, typically from 55 to 100% of the crop price as established annually by RMA. If the harvest is less than the insured yield, the farmer can collect an indemnity payment

<sup>281</sup> Adverse selection could occur if the insured party has better knowledge of the relative risk of a particular situation than the insurance provider does.

<sup>282</sup> For a current list of crops covered, see <http://www.rma.usda.gov/policies/08croplist.html>.

<sup>283</sup> This information was provided to the Subcommittee by USDA.

based upon the difference. Indemnity payments are calculated by multiplying the difference between the harvest and the yield by the insured percentage of the established price that was selected when crop insurance was purchased. Yield based plans do not use futures market prices in their calculations.

Under revenue based plans, the farmer insures a level of crop income, based upon the average yield multiplied by the expected price for the crop. If the revenue that the farmer earns is lower than the level the farmer insured, an indemnity payment will be made for the difference. Three key plans under the revenue insurance category, Crop Revenue Coverage (CRC), Revenue Assurance (RA), and Group Risk Income Plan (GRIP), use futures market settlement prices to establish the expected crop prices as well as the harvest price that is used to determine any loss.<sup>284</sup>

### 3. Inadequate Program Oversight

RMA is responsible for protecting against waste, fraud and abuse in the crop insurance program. Recently, the U.S. Government Accountability Office (GAO) and others have raised concerns regarding the integrity and oversight of the program. In 2005, 2006, and 2007, GAO reports detailed millions of dollars lost to wasteful and incorrect indemnity payments that RMA did not identify, prevent, or correct.<sup>285</sup> GAO found that some farmers allowed crops to fail – either deliberately or through neglect – in order to collect insurance.

Additionally, GAO found that the insurance companies running the programs did not conduct due diligence in investigating losses and paying claims, and the payments USDA made to companies running the programs were found to be excessive. GAO reported that USDA data showed that an estimated \$62 million in 2006 indemnity payments made under the crop insurance program were the result of waste, such as incorrect payments based on incomplete or missing paperwork. In 2007, this number was \$63 million, and in 2008, it more than doubled to \$165

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<sup>284</sup> Given similarities in the programs, USDA has proposed a rule that would combine the Crop Revenue Coverage program and the Revenue Assurance program starting in 2011.

<sup>285</sup> See *Crop Insurance: Continuing Efforts Are Needed to Improve Integrity and Ensure Program Costs Are Reasonable*, GAO-07-819T (May 3, 2007). See also *Crop Insurance: More Needs to Be Done to Reduce Program's Vulnerability to Fraud, Waste, and Abuse*, GAO-06-878T, (June 15, 2006) and *Crop Insurance: Actions Needed to Reduce Program's Vulnerability to Fraud, Waste, and Abuse*, GAO-05-528 (September 30, 2005).

million.<sup>286</sup> According to GAO, USDA has taken some steps to address these concerns, but in 2007, GAO identified federal crop insurance as a program in need of better oversight to ensure program funds were spent as economically, efficiently, and effectively as possible.<sup>287</sup>

One person interviewed by the Subcommittee stated that some farmers have chosen to plant crops even though futures prices were unusually high relative to cash prices because, under the crop insurance program, the farmer could receive an indemnity payment if prices subsequently fell. Higher futures prices encourage farmers to plant more wheat even if these high futures prices are not justified by the actual conditions of supply and demand for wheat. The person interviewed stated that even though farmers recognized that there would be ample supplies of soft red winter wheat, some planted additional acres of wheat anyway, in the expectation they would nonetheless receive indemnity payments if prices fell as a result of the overplantings. Another person interviewed by the Subcommittee stated that the futures market had become so disconnected from the cash market that he was not aware of any farmers who based any of their planting decisions on the prices in the futures market.

### **B. Impact of Futures Prices on Crop Insurance**

Recent turmoil in the wheat market, including rising prices, increased price volatility, and divergent prices in the cash and futures markets, has led to uncertainty among farmers when making decisions about which crop insurance to buy. In addition, because revenue-based crop insurance relies on base and harvest prices to calculate revenue guarantees and crop revenues, increasing futures prices and the widening gap (basis) between cash and futures prices have led to higher premiums and greater uncertainty as to the eventual level of indemnity payments.

USDA offers farmers three different revenue insurance plans: Crop Revenue Coverage (CRC), Revenue Assurance (RA), and Group Risk Income Plan (GRIP). All three use futures settlement prices to establish crop price guarantees to be paid in the event of a loss.

Futures prices are used to determine a “base price” and “harvest price” for insured crops. For an insured wheat crop, for example, the

<sup>286</sup> U.S. Department of Agriculture 2008 Performance and Accountability Report (November 17, 2008) at p.300.

<sup>287</sup> *Crop Insurance: Continuing Efforts are Needed to Improve Program Integrity and Ensure Program Costs are Reasonable*, GAO-07-994T (June 7, 2007).



base price is determined by averaging daily contract settlement prices on the Chicago futures exchange during the one month period, August 15-September 14, for the July futures wheat contract in the following year. The July contract is used, because it is the futures contract that will expire closest to the time when the insured wheat crop will be harvested. Base prices for corn and soybean crops are determined using futures contracts that expire closest in time to when each of those commodities is harvested, as set out in Table 1. Once established, the base price is used to provide revenue guarantees under a formula applicable to the particular type of crop insurance purchased by the farmer.

The harvest price is also determined by using the average daily settlement price for a specified futures contract on the Chicago exchange. For wheat, settlement prices during the month of June for the July futures contract are used; corn and soybean crops use futures contracts in later months, as set out in Table ES-1. Once established, the harvest price is used to calculate a guaranteed amount of revenue from the harvest of the insured crop. The amount is calculated by taking the farmer's actual production history (APH) yield multiplied by the yield coverage level and the harvest price. The policy's guaranteed revenue is the larger of a specified minimum guarantee or the harvest guarantee calculated for a specific policyholder. The resulting guaranteed revenue amount is then used in determining whether and how much of an indemnity payment is owed to an insured farmer.

**Base and Harvest Price Calculation Information for Wheat, Corn, Soybeans**

	<b>Base Price</b>	<b>Harvest Price</b>
<b>Wheat</b>	Average settlement price from August 15-September 14 for the following July futures contract on Chicago exchange	Average settlement price in June for July futures contract on Chicago exchange
<b>Corn</b>	Average settlement price in February for December futures contract on Chicago exchange	For CRC coverage: average settlement price in October for December futures contract on Chicago exchange  For RA and GRIP coverage: average settlement price in November for December futures contract on Chicago exchange
<b>Soybeans</b>	Average settlement price in February for November futures contract on Chicago exchange	Average settlement price in October for November futures contract on Chicago exchange

**Table 8.** Prepared by Permanent Subcommittee on Investigations, May 2009 Data source: USDA

Farmers with certain CRC, RA, or GRIP policies can use the larger of the base or harvest price to calculate their guarantee. Farmers with other RA policies use only the base price to calculate their indemnity payment. Typically, if the harvest price is greater than the base price, then an indemnity payment can be made only if there is a yield loss, meaning the actual yield is less than the yield guarantee. If there is a yield loss, then the farmer is paid for the lost bushels (yield guarantee minus actual yield) at the more favorable harvest price.

To understand how the widening gap between futures and cash prices can increase the cost of federal crop insurance premiums and decrease program effectiveness, the following examples explain how base and harvest prices affect premiums and payouts.

### **1. Increased Insurance Premiums**

USDA uses the prices of commodity futures contracts to calculate the premiums due under federal crop insurance policies. As futures prices have increased in recent years, farmers have faced higher premiums for crop insurance coverage. Because the Federal Government subsidizes these premiums, the higher amounts have also increased taxpayer costs.

Crop insurance premium rates vary by county, crop, type, practice, and plan or insurance, and are based on a combination of historical yield losses for the crop and county as well as a variable known as the price factor or price volatility as measured by options traded on the Chicago exchange. The premiums for CRC, RA, and GRIP policies represent a combination of yield risk and price risk. USDA uses historical yield loss data to determine the “yield risk” associated with a particular crop in a particular county – the risk that the actual yield may be lower than the average yield. Premium rates for revenue products are based on a combination of yield risk and the price risk arising from the volatility of the prices in the futures market.<sup>288</sup> Below are two examples of how premiums are calculated.<sup>289</sup>

#### **Example 1: Futures Prices and CRC Premiums**

A corn farmer has an actual production history (APH) yield of 152 bushels per acre, and chooses to insure the crop under a CRC policy at 65% with a base price of \$5.40 per bushel. The base price is derived from the average settlement prices during February for the following December futures contract traded on the Chicago exchange. The premium rate for the farmer’s county has been determined to be 0.069. This rate is based upon a combination of historical yield losses for the crop and county and the price volatility as measured by options traded on the Chicago exchange. Calculations below are for CRC coverage. RA coverage calculations would be the same, although the premium rate could vary.

Expected Value of Crop: APH Yield x Base Price  
 $= 152 \times \$5.40 = \$821.80$

Yield Guarantee: APH Yield x Coverage Level  
 $= 152 \times .65 = 98.8$

Revenue Guarantee: Yield Guarantee x Base Price  
 $= 98.8 \times \$5.40 = \$533.52$

Total Premium: Revenue Guarantee x Premium Rate  
 $= \$533.62 \times 0.069 = \$36.50$

Premium Subsidy: The Federal Government pays a portion of the farmer’s premium. That portion varies by coverage level and insurance

<sup>288</sup> The “price risk” is measured by the price of options on futures for the commodity.

<sup>289</sup> These examples were provided to the Subcommittee by USDA.

plan. For 65% coverage for CRC insurance in 2009, the Federal Government pays 59% of the total premium.  
 $= \$36.50 \times .59 = \$21.53$

Farmer Premium: Total Premium-Premium Subsidy  
 $= \$36.50 - \$21.53 = \$14.97$

### **Example 2: Futures Prices and GRIP Premiums**

A corn farmer has an actual production history (APH) yield of 159.4 bushels per acre, and chooses to insure the crop under a GRIP policy at 90% with a base price of \$4.04 per bushel. As above, the base price is derived from the average settlement prices for the December futures corn contract traded on the Chicago exchange. The premium rate for the farmer's county has been determined to be 0.111. This rate is based upon a combination of historical yield data and price volatility.

Expected County Revenue (ECR): Expected County Yield (ECY) x Base Price  
 $= 159.4 \times \$4.04 = \$643.97$

GRIP Liability:  $1.5 \times \text{ECR}$   
 $= 1.5 \times \$643.07 = \$965.97$

Yield Guarantee:  $\text{ECY} \times \text{Coverage Level}$   
 $= 159.4 \times .9 = 143.5$

Revenue Guarantee:  $\text{ECR} \times \text{Coverage Level}$   
 $= \$643.98 \times .9 = \$579.58$

Total Premium:  $\text{GRIP Liability} \times \text{Premium Rate}$   
 $= \$965.97 \times 0.111 = \$107.22$

Premium Subsidy: The Federal Government pays a portion of the farmer's premium. That portion varies by coverage level and insurance plan. For 90% coverage for GRIP insurance in 2009, the Federal Government pays 44% of the total premium.  
 $= \$107.22 \times .44 = \$47.18$

Farmer Premium: Total Premium-Premium Subsidy  
 $= \$107.22 - \$47.18 = \$60.04$

In the case of both premium calculations, a higher futures price would have boosted the base price and resulted in a higher premium cost to both the Federal Government and farmer.

## 2. Inaccurate Insurance Payouts

Futures prices also affect insurance payouts, since the level of insurance payouts depends on both the levels of futures prices at the time the crop is planted and the levels of the futures prices at the time of harvest. Higher futures prices at the time of planting can result in a higher level of insurance payments, whereas higher futures prices at the time of harvest can result in either a higher or a lower level of insurance payments, depending on the type of insurance and other factors relating to the size of the harvested crop. Since the Federal Government provides financial support for the crop insurance program, higher insurance payouts impose additional costs on taxpayers. The following examples demonstrate how futures prices are incorporated into federal crop insurance calculations.

**Crop Revenue Coverage.** Crop Revenue Coverage (CRC) uses both a farmer's average yield and commodity futures prices to set revenue guarantees. CRC insurance protects against reductions in price, yields, or a combination of both. Coverage is based upon a farmer's average yield (or actual production history – "APH") multiplied by the higher of the base price or the harvest price for the commodity (based on the specified futures exchange settlement prices).

A farmer's APH yield is based upon a minimum of four and a maximum of 10 consecutive years of crop yield data. A farmer can choose an insurance coverage level of between 50 and 85% of a guaranteed level of revenue. CRC will make payments whenever the farmer's actual revenue is below the guarantee. There is no limit on the amount the harvest price can decrease from the base price; however, the harvest price may not be greater than 200% of the expected price. For example, the 2009 expected price for CRC for winter wheat in Missouri is \$8.58. That means that the harvest price for wheat is limited to \$17.16 or lower.

### Example 3: Futures Prices and CRC Insurance

A wheat farmer has an APH yield of 50 bushels per acre, and chooses to insure the crop under a CRC policy at 75% of the APH yield with a base price of \$5.93 per bushel. Assume the harvest price is \$7.93 per bushel, and the harvested yield is 30 bushels per acre. The base price of \$5.93 was derived from the average settlement price from August 15 to September 14 for the July wheat futures contract during the harvest year, as set out in Table 1. The harvest price of \$7.93 was

derived from the average daily settlement price during the month of June for the July wheat futures contract, as set out in Table 1.

Minimum Guaranteed Revenue= APH Yield x Yield Coverage Level x Base Price  
 $= 50 \times 75\% \times \$5.93 = \$222.37$  per acre

Harvest Guarantee Revenue= APH Yield x Yield Coverage Level x Harvest Price  
 $= 50 \times 75\% \times \$7.93 = \$297.37$

The Calculated Revenue, used in determining an indemnity payment:  
 Calculated Revenue= Harvested Yield x Harvest Price=  $30 \times \$7.93 = \$237.90$

The indemnity payment is the difference between the guaranteed revenue and calculated revenue: Indemnity Payment=  $\$297.37 - \$237.90 = \$59.47$  per acre

This example shows how CRC insurance would provide an indemnity payment due to low yields. Farmers with CRC coverage could also receive indemnity payments if the calculated revenue were lower than the revenue guarantee. In either case, however, a higher futures price would have boosted the base and harvest prices and resulted in larger CRC indemnity payments.

**Revenue Assurance.** Revenue Assurance (RA) is similar to CRC insurance in that the plan guarantees a minimum gross income per acre, but the yield levels used to calculate the guaranteed level of revenue have a narrower range than in the CRC. RA also uses futures prices to establish a set guaranteed level of revenue under its policies. RA policies are written in a manner similar to CRC, but offer farmers two options. The standard RA policy bases coverage on the farmer's average yield multiplied by the base price for the commodity based on the specified futures exchange settlement prices for the commodity. This price does not increase even if the futures price rises by harvest time. The second option is the "harvest price option." If the farmer elects to purchase this option, the revenue guarantee does increase if the harvest price is higher than the base price, just as it does under CRC. The harvest price option carries a higher premium than the base price option. RA will insure a farmer at a coverage level between 65-85%. As with CRC, the harvest price may not be greater than 200% of the expected price. Here is an example of how the RA base price option would work.

**Example 4: Futures Prices and RA Insurance**

A wheat farmer has an APH of 50 bushels per acre and chooses to insure the crop at 75% of the APH yield with a base price of \$5.93 per bushel. Assume the harvest price is \$7.93 per bushel and the harvested yield is 30 bushels per acre. As above, the base price of \$5.93 and the harvest price of \$7.93 are derived from the average settlement prices for the July futures wheat contract traded on the Chicago exchange.

Revenue Guarantee:  $\text{APH} \times \text{Yield Coverage Level} \times \text{Base Price}$   
 $= 50 \times 75\% \times \$5.93 = \$222.37$

Actual Harvest:  $\text{Actual Yield} \times \text{Harvest Price}$   
 $= 30 \times \$7.93 = \$237.90$

Indemnity =  $\text{Revenue Guarantee} - \text{Actual Revenue}$   
 $= \$222.37 - 237.90 = \$0$

The revenue guarantee is used in the calculation since under the base price option, the revenue guarantee does not rise even though the harvest price is greater than the base price. In this example, higher futures prices for the July futures contract would have reduced the amount of indemnity, since the price of the July futures contract is used to calculate the actual revenue. If the July futures contract is very high relative to the actual cash price for the crop, the use of this formula will result in less insurance payments than warranted by the actual conditions in the cash market at the time of the harvest.

**Group Risk Income Protection.** Group Risk Income Protection (GRIP) is an insurance plan based on county yields rather than individual yields. The income guarantee level is based upon county expected yield and average futures prices. The actual gross revenue is based upon the actual county yield and the average futures price at harvest. Because GRIP is a group-based product, guarantees and indemnity payments are determined at the county level for all farmers participating in the program. This approach means that if a farmer has a good crop, but the overall county does not, the farmer will still receive an indemnity payment and vice-versa.

GRIP does not require any farm production history so it is an attractive plan to farmers who do not have production records or who have a low APH yield. Unlike the other insurance options, GRIP offers coverage between 70 and 90% of the county yield (at 5% increments), and most farmers choose to insure at the highest level.

Under GRIP, farmers receive payments any time the actual county revenue drops below the trigger revenue that the farmer chooses. The trigger revenue is calculated by multiplying the expected crop price by the expected county yield, and multiplying the result by the elected level of coverage. The amount of payment the farmer receives depends upon the level of protection selected when the farm is enrolled in the program. The maximum liability per insured acre is 150% of the base price, multiplied by the expected county yield. If a farmer elects to increase the liability of the policy, the premium and potential indemnity increase proportionately.

GRIP can also be purchased with a harvest option, which means that if the harvest futures price is higher than the base price, the harvest price is used to calculate the trigger price. GRIP has the same limits as CRC on the degree to which the harvest price can differ from the base price. Below is an example of how GRIP works.

#### **Example 5: Futures Prices and GRIP Insurance**

In 2007, a wheat farmer lives in a county with an expected county yield of 50 bushels per acre, and chooses to insure the crop under a GRIP policy at 90% with a base price of \$4.35 per bushel. Assume a harvest price of \$5.74 and a harvest yield of 30 bushels per acre. The base price of \$4.35 and the harvest price of \$5.74 are derived from the average settlement prices for the July wheat futures contract traded on the Chicago exchange.

Expected County Revenue (ECR): Expected County Yield (ECY) x  
Base Price  
= 50 x \$4.35= \$217.50

GRIP Liability: 1.5 x ECR (Growers may elect to increase the liability of their policy up to 150% of the expected county revenue. Most growers select this option.)  
= 1.5 x \$217.50= \$326.25

Yield Guarantee: ECY x Coverage Level  
=50 x .9= 45

Revenue Guarantee: ECR x Coverage Level  
= \$217.5 x .9= \$195.75

#### Indemnity Calculation

Actual County Revenue (ACR): Actual County Yield x Harvest Price  
= 30 x \$5.74= \$172.20



Payment Factor for GRIP:  $([\text{Revenue Guarantee}-\text{ACR}]/\text{Revenue Guarantee})$  – This is the percent of a GRIP policy’s liability to be paid out as an indemnity payment. The purpose of this payment formula is to create a “disappearing deductible” – an enhanced payout that helps to cover the deductible portion of the loss.  
 $= [\$195.75-\$172.20]/ \$195.75= 12.03\%$

Indemnity Payment:  $\text{Payment Factor} \times \text{Maximum GRIP Liability}$   
 $= 12.03\% \times \$326.25 = \$39.24 \text{ per acre}$

### **3. Impact of Divergent Futures and Cash Prices**

Because key federal crop insurance plans rely on base and harvest prices to set revenue guarantees, and those prices reflect the relevant commodity futures contract prices, the trend in recent years toward large differences (basis) between futures and cash prices and the lack of price convergence at contract expiration signal that the program is less and less reflective of the actual conditions in the wheat market.

Table ES-2 shows the base and harvest prices for the last three years for soft red winter wheat, and adds comparative data on prices from the cash market. This data shows an upward pricing trend as well as an increasing difference between the harvest and cash prices (basis). For example, prior to 2006, the greatest difference between the harvest price and the cash price was 46 cents per bushel. In 2006, the difference between the harvest price and the cash price increased to 80 cents, which was more than 25% of the cash price. In 2008, the difference between the harvest price and the cash price grew to \$1.21 per bushel.

**Base, Harvest, and Cash Prices for Soft Red Winter Wheat  
2001-2009**

Year	Base Price for SRW wheat for RA coverage	Harvest Price for SRW wheat for RA coverage	Average Cash Price for SRW wheat in June in Toledo, OH	Difference Between Harvest Price and Cash Price
2001	\$2.97	\$2.63	\$2.17	+\$0.46
2002	\$3.04	\$3.17	\$3.00	+\$0.17
2003	\$3.53	\$3.07	\$3.02	+\$0.05
2004	\$3.36	\$3.35	\$3.36	-\$0.01
2005	\$3.40	\$3.31	\$3.13	+\$0.18
2006	\$3.50	\$3.84	\$3.04	+\$0.80
2007	\$4.35	\$5.94	\$5.23	+\$0.71
2008	\$5.93	\$8.31	\$7.10	+\$1.21
2009	\$8.58	TBD	TBD	TBD

**Table 9.** Prepared by the Permanent Subcommittee on Investigations,  
June 2009 Data source: USDA, MGEX

The lack of convergence between futures and cash prices in recent years affects the accuracy and effectiveness of the indemnity payments farmers receive from their crop insurance coverage. Given that the indemnity calculation for crop insurance in some of the insurance programs, such as the RA program, use the settlement price of the futures market contract that is closest to the contract that will expire at the time of harvest, and these futures prices have risen relative to the cash harvest prices, the calculation of the revenue received by the farmer under these insurance formulas may be substantially higher than the actual revenue received by the farmer, which would result in a lower insurance payment than justified by the actual conditions in the cash market. Under the CRC Insurance program, however, as shown in Example 3, a higher futures price could result in a higher revenue guarantee and therefore a higher insurance payout.

These examples demonstrate how the increasingly large difference between the futures price and the cash price for wheat, together with the failure of these two prices to converge as a futures contract nears expiration, can lead to higher or lower crop insurance payouts than warranted by the actual market conditions.

APPENDIX

Division of  
Market Oversight

## U.S. COMMODITY FUTURES TRADING COMMISSION

Three Lafayette Centre  
1155 21st Street, NW, Washington, DC 20581  
Telephone: (202) 418-5260  
Facsimile: (202) 418-5527  
www.cftc.gov

July 29, 2005

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

Dear [REDACTED]:

By filings dated July 11, 2005 [REDACTED] has requested, pursuant to Commodity Futures Trading Commission ("Commission") rule 1.47, that the Commission recognize as bona fide hedging specific transactions and positions in the Chicago Board of Trade's ("CBOT") corn, wheat, soybean, and soybean oil contracts, the New York Board of Trade's ("NYBOT") cotton contract, and the Kansas City Board of Trade's ("KCBT") wheat contract.<sup>1</sup> The filing represents that [REDACTED] enters, from time to time, into OTC price swap agreements based on a basket comprised of the Goldman Sachs Commodity Index and the Dow Jones AIG Commodity Index, which includes the above-referenced futures contracts as components of the indices underlying basket. [REDACTED] is the floating price payor under these basket swap agreements. [REDACTED] hedges its price exposure by purchasing the above-referenced futures and option contracts. The Commission understands that [REDACTED] will not hold hedge positions into the spot month of the above-referenced futures markets.

The filing states that [REDACTED] maximum long hedging requirements for futures and futures-equivalent option contracts are as follows:

Futures Contract	Single Month	All Months Combined
CBOT Corn	43,873	43,873
CBOT Wheat	26,345	26,345
CBOT Soybeans	17,910	17,910
CBOT Soybean Oil	10,755	10,755
NYBOT Cotton	9,725	9,725
KCBT Wheat	3,889	3,889

<sup>1</sup> The current filing supplements information provided in previous filings.

REPORT: EXCESSIVE SPECULATION  
IN THE WHEAT MARKET  
EXHIBIT #1

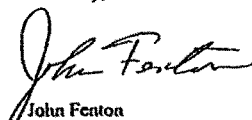
The information furnished, including the nature of the price risks that these transactions would entail and the demonstration that the proposed long futures and futures-equivalent option positions are economically appropriate to the reduction of risk exposure attendant to the conduct and management of a commercial enterprise, satisfies the requirement of section 1.47 of the regulations under the Commodity Exchange Act ("Act").

Based on the information provided in your filing, the Division of Market Oversight ("Division"), pursuant to authority delegated to it under Commission rule 140.97, recognizes the described long futures and futures-equivalent option positions as bona fide hedging. However, at no time should the hedge position in the above-referenced futures and option contracts exceed the lesser of (1) the value fluctuation equivalent (in terms of the commodity for future delivery) of the transactions generically described in the filing, or (2) the maximum level of futures and futures-equivalent positions currently considered by the Commission as a bona fide hedge.

The Division's determination with regard to bona fide hedging and exemptions from position limits is based upon the facts and representations contained in [REDACTED] filing. Any different, omitted, or changed facts or conditions may require a different conclusion. The Division emphasizes that the above determination does not excuse [REDACTED] from complying with any otherwise applicable provisions of the Act and Commission rules. The Division expects that [REDACTED] has and will maintain adequate internal controls to monitor risks incurred in entering swap transactions. Additionally, Commission rule 1.3(z)(1)(iii) requires that positions must be established and liquidated in an orderly manner in accordance with sound commercial practices in order to be classified as bona fide hedging transactions.

Additional filings under section 1.47 only become necessary when specifically requested by the Commission or when [REDACTED] hedging requirements for the transactions described in this filing exceed the maximum levels specified in this letter. The current filing has demonstrated hedging requirements for long positions. However, [REDACTED] would be required to make an additional filing if it needs to establish short hedging positions that exceed position limits specified in Commission rule 150.2. Pursuant to section 1.47, supplemental statements must be submitted at least ten days in advance of the date on which it is expected that the position will exceed the hedge exemption.

Sincerely,

  
John Fenton  
Deputy Director  
Market Surveillance Section



DIVISION OF  
MARKET OVERSIGHT

U.S. COMMODITY FUTURES TRADING  
COMMISSION  
Three Lafayette Centre  
1155 21st Street, NW, Washington, DC 20581  
Telephone: (202) 418-5260  
Facsimile: (202) 418-5527

April 13, 2006

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

Dear [REDACTED]:

By filing dated April 8, 2006, [REDACTED] has requested, pursuant to Commodity Futures Trading Commission ("Commission") rule 1.47, that the Commission recognize as bona fide hedging specific transactions and positions for Chicago Board of Trade corn, soybeans and wheat futures.<sup>1</sup> The filing represents that [REDACTED] is a dealer in over-the-counter ("OTC") swaps and options on exchange-traded commodities and commodity index contracts, including the Dow Jones AIG Commodity Index ("DJ-AIGCI"). [REDACTED] is the fixed price receiver in these OTC transactions. In connection with this OTC business, [REDACTED] hedges its financial risk by buying futures on the commodities that comprise the DJ-AIGCI index.

The filing states the [REDACTED]'s maximum hedging requirements for long futures positions are as follows:

Futures Contract	Single Month	All Months Combined
Corn	83,000	85,000
Soybeans	42,000	46,000
Wheat	49,000	53,000

The filing represents that [REDACTED] will not carry any positions into the spot month for the above-referenced futures contracts.

The information furnished, including the nature of the price risks that these transactions would entail and the demonstration that the proposed futures positions are economically appropriate to

<sup>1</sup> By letter dated March 31, 2006, the Division previously recognized positions in corn futures up to a maximum of 75,000 contracts in any single month and 77,000 contracts in all months combined as bona fide hedging. By letter dated January 20, 2006, the Division recognized as bona fide hedging positions in soybean futures and wheat futures up to a maximum of 32,000 contracts and 39,000 contracts respectively in any single month and 36,000 contracts and 43,000 contracts respectively in all months combined. The current filing requests increases in these levels for corn, soybean and wheat futures.

REPORT: EXCESSIVE SPECULATION  
IN THE WHEAT MARKET  
EXHIBIT #2

the reduction of risk exposure attendant to the conduct and management of a commercial enterprise satisfies the requirement of section 1.47 of the regulations under the Commodity Exchange Act ("Act").

Based on the information provided in your filing, the Division of Market Oversight ("Division"), pursuant to authority delegated to it under Commission rule 140.97, recognizes the described futures positions as bona fide hedging. However, at no time should the hedge positions in corn, soybeans and wheat exceed the lesser of (1) the value fluctuation equivalent (in terms of the commodity for future delivery) of the transactions generically described in the filing, or (2) the maximum level of futures positions currently considered by the Commission as a bona fide hedge. The quantity of futures contracts permitted under the conditions described above must be reduced by the quantity of futures-equivalent option contracts held as a hedge of the above transactions. In addition, the Division does not recognize as bona fide hedging positions that are carried into the spot month and such positions are not exempt from the spot month position limits.

The Division's determination with regard to bona fide hedging and exemptions from position limits is based upon the facts and representations contained in [REDACTED] filing. Any different, omitted, or changed facts or conditions may require a different conclusion. The Division emphasizes that the above determination does not excuse [REDACTED] from complying with any otherwise applicable provisions of the Act and Commission rules. The Division expects that [REDACTED] has and will maintain adequate internal controls to monitor risks incurred in entering swap transactions. Additionally, Commission rule 1.3(z)(1)(iii) requires that positions must be established and liquidated in an orderly manner in accordance with sound commercial practices in order to be classified as bona fide hedging transactions.

Additional filings under section 1.47 only become necessary when specifically requested by the Commission or when [REDACTED] hedging requirements for the transactions described in this filing exceed the maximum levels specified in this letter. Pursuant to section 1.47, supplemental statements must be submitted at least ten days in advance of the date on which it is expected that the position will exceed the hedge exemption.

Sincerely,

  
John Fenton  
Deputy Director  
Market Surveillance Section

**CONFIDENTIAL**



DIVISION OF  
MARKET OVERSIGHT

U.S. COMMODITY FUTURES TRADING  
COMMISSION  
Three Lafayette Centre  
1155 21st Street, NW, Washington, DC 20581  
Telephone: (202) 418-5260  
Facsimile: (202) 418-5527

August 21, 2007

[REDACTED]

By filing dated July 26, 2007, you requested on behalf of [REDACTED], pursuant to Commodity Futures Trading Commission ("Commission") rule 1.47, that the Commission recognize as bona fide hedging specific transactions and positions in the Chicago Board of Trade's wheat, corn, and soybean futures (and related options) contracts.

The filing represents that [REDACTED] uses the above-referenced futures contracts to hedge price exposure resulting from OTC swaps in various commodity indices, including the Dow Jones Commodity Index, the Goldman Sachs Commodity Index, and the Lehman Brothers Commodity Index.

The filing states that [REDACTED] maximum hedging requirements for net long futures positions are as follows:

Futures Contract	Single Month	All Months Combined
CBOT Wheat	10,000	10,000
CBOT Corn	15,000	15,000
CBOT Soybeans	10,000	10,000

The filing does not request an exempt from spot month position limits, as defined under Part 150 of the Commodity Exchange Act, for the above-referenced futures contracts.

The information furnished, including the nature of the price risks that these transactions would entail and the demonstration that the proposed futures positions are economically appropriate to the reduction of risk exposure attendant to the conduct and management of a commercial enterprise satisfies the requirement of section 1.47 of the regulations under the Commodity Exchange Act.

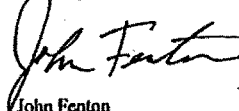
REPORT: EXCESSIVE SPECULATION  
IN THE WHEAT MARKET  
EXHIBIT #3

Based on the information provided in your filing, the Division of Market Oversight ("Division"), pursuant to authority delegated to it under Commission rule 140.97, recognizes the described futures positions as bona fide hedging. However, at no time should the hedge positions in these commodities exceed the lesser of (1) the value fluctuation equivalent (in terms of the commodity for future delivery) of the transactions generically described in the filing, or (2) the maximum level of futures positions currently considered by the Commission as a bona fide hedge. The quantity of futures contracts permitted under the conditions described above must be reduced by the quantity of futures-equivalent option contracts held as a hedge of the above transactions. In addition, the Division does not recognize as bona fide hedging positions that are carried into the spot month and such positions are not exempt from the spot month position limits.

The Division's determination with regard to bona fide hedging and exemptions from positions limits is based upon the facts and representations contained in [REDACTED] filing. Any different, omitted, or changed facts or conditions may require a different conclusion. The Division emphasizes that the above determination does not excuse [REDACTED] from complying with any otherwise applicable provisions of the Act and Commission rules. The Division expects that [REDACTED] has and will maintain adequate internal controls to monitor risks incurred in entering swap transactions. Additionally, Commission rule 1.3(z)(1)(iii) requires that positions must be established and liquidated in an orderly manner in accordance with sound commercial practices in order to be classified as bona fide hedging transactions.

Additional filings under section 1.47 only become necessary when specifically requested by the Commission or when [REDACTED] hedging requirements for the transactions described in this filing exceed the maximum levels specified in this letter. Pursuant to section 1.47, supplemental statements must be submitted at least ten days in advance of the date on which it is expected that the position will exceed the hedge exemption.

Sincerely,



John Fenton  
Deputy Director  
Market Surveillance Section

CONFIDENTIAL





Division of  
Market Oversight

# U.S. COMMODITY FUTURES TRADING COMMISSION

Three Lafayette Centre  
1155 21st Street, NW, Washington, DC 20581  
Telephone: (202) 418-5260  
Facsimile: (202) 418-5527  
www.cftc.gov

April 1, 2008

[REDACTED]

Dear [REDACTED]:

By filing dated March 12, 2008, [REDACTED] has provided supplementary information, pursuant to Commodity Futures Trading Commission ("Commission") Rule 1.47, to support a request for an increase in its hedge exemption levels in Chicago Board of Trade ("CBOT") wheat and soybean futures (and related options) contracts.<sup>1</sup> The current filing requests an increased long-side exemption level for wheat up to 17,500 futures contracts in any single month and in all months combined, and an increased long-side exemption level for soybean futures up to 10,000 futures contracts in any single month and in all months combined. The filing represents that [REDACTED] seeks to hedge wheat and soybean price risks that results from transactions in OTC derivatives linked to various commodity indexes, as well as OTC derivatives linked directly to physical commodities.

The information furnished, including the nature of the price risks that these transactions would entail and the demonstration that the proposed futures positions are economically appropriate to the reduction of risk exposure attendant to the conduct and management of a commercial enterprise satisfies the requirement of section 1.47 of the regulations under the Commodity Exchange Act ("Act").

Based on the information provided in your filing, the Division of Market Oversight ("Division"), pursuant to authority delegated to it under Commission rule 140.97, recognizes the described futures positions as bona fide hedging. However, at no time should the hedge positions in CBOT wheat and soybean futures exceed the lesser of (1) the value fluctuation equivalent (in terms of the commodity for future delivery) of the transactions generically described in the filing, or (2) the maximum level of futures positions currently considered by the Commission as a bona fide hedge. The quantity of futures contracts permitted under the conditions described above must include, on a futures-equivalent basis, any related option positions held as a hedge of the above

<sup>1</sup> The filing also provides information on the Chicago Mercantile Exchange's ("CME") live cattle futures contract. This contract does not have Federal position limits; the position limits in this contract are administered by the Exchange. Accordingly, [REDACTED] must apply to the CME to request an increase in its hedge exemption level for this contract.

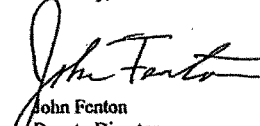
REPORT: EXCESSIVE SPECULATION  
IN THE WHEAT MARKET  
EXHIBIT #4

described transactions. In addition, the Division does not recognize as bona fide hedging positions that are carried into the spot month and such positions are not exempt from the spot month position limits.

The Division's determination with regard to bona fide hedging and exemptions from position limits is based upon the facts and representations contained in [REDACTED] filing. Any different, omitted, or changed facts or conditions may require a different conclusion. The Division emphasizes that the above determination does not excuse [REDACTED] from complying with any otherwise applicable provisions of the Act and Commission rules. The Division expects that [REDACTED] has and will maintain adequate internal controls to monitor risks incurred in entering these transactions. Additionally, Commission rule 1.3(z)(1)(iii) requires that positions must be established and liquidated in an orderly manner in accordance with sound commercial practices in order to be classified as bona fide hedging transactions.

Additional filings under Section 1.47 only become necessary when specifically requested by the Commission or when [REDACTED]s hedging requirements for the transactions described in this filing exceed the maximum levels specified in this letter. Pursuant to Section 1.47, supplemental statements must be submitted at least ten days in advance of the date on which it is expected that the position will exceed the hedge exemption.

Sincerely,

  
John Fenton  
Deputy Director  
Market Surveillance Section



Division of  
Market Oversight

**U.S. COMMODITY FUTURES TRADING COMMISSION**

Three Lafayette Centre  
1155 21st Street, NW, Washington, DC 20581  
Telephone: (202) 418-5260  
Facsimile: (202) 418-5527  
[www.cftc.gov](http://www.cftc.gov)

March 4, 2008

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

Dear [REDACTED]:

By filing dated February 21, 2008, [REDACTED] has requested, pursuant to Commodity Futures Trading Commission ("Commission") rule 1.47, that the Commission recognize as bona fide hedging specific transaction and positions for wheat futures (and related options) traded on the Kansas City Board of Trade ("KCBT"). The filing represents that [REDACTED] uses the KCBT wheat contract to hedge its price risk against commodity indices, index related derivatives, and agricultural OTC business.

The filing requests that the Commission recognize positions in KCBT wheat futures up to a limit of 8,000 long contracts in any single contract month and 10,000 long contracts in all months combined. The filing further represents that [REDACTED] has no intention of making or taking delivery as a result of this increase, and that [REDACTED] will monitor the front month exposure to ensure that [REDACTED] has either rolled or liquidated before first notice day.

The information furnished, including the nature of the price risks that these transactions would entail and the demonstration that the proposed futures positions are economically appropriate to the reduction of risk exposure attendant to the conduct and management of a commercial enterprise, satisfies the requirement of section 1.47 of the regulations under the Commodity Exchange Act (Act).

Based upon the information provided in your filing, the Division of Market Oversight ("Division"), pursuant to authority delegated to it under Commission rule 140.97, recognizes the described futures positions as bona fide hedging. However, at no time should the hedge positions exceed the lesser of (1) the value fluctuation equivalent (in terms of the commodity for future delivery) of the transactions generically described in the filing, or (2) the maximum level of futures positions currently considered by the Commission as a bona fide hedge. The quantity of futures contracts permitted under the conditions described above must include, on a futures-equivalent basis, any related options positions held as a hedge of the above described transactions. In addition, the Division does not recognize as bona fide hedging positions that are

**REPORT: EXCESSIVE SPECULATION  
IN THE WHEAT MARKET  
EXHIBIT #5**

carried into the spot month, and such positions are not exempt from the spot month position limit.

The Division's determination with regard to bona fide hedging and exemptions from positions limits is based upon the facts and representations contained in [REDACTED] filing. Any different, omitted, or changed facts or conditions may require a different conclusion. The Division emphasizes that the above determination does not excuse [REDACTED] from complying with any otherwise applicable provisions of the Act and Commission rules, thereunder. The Division expects that [REDACTED] has and will maintain adequate internal controls to monitor risks incurred in entering swap transactions. Additionally, Commission rule 1.3(z)(1)(iii) requires that positions must be established and liquidated in an orderly manner in accordance with sound commercial practices in order to be classified as bona fide hedging transactions.

Additional filings under section 1.47 only become necessary when specifically requested by the Commission or when [REDACTED] hedging requirements for the transactions described in this filing exceed the maximum levels specified in this letter. Pursuant to section 1.47, supplemental statements must be submitted at least ten days in advance of the date on which it is expected that the position will exceed the hedge exemption.

Sincerely,



John Fenton  
Deputy Director  
Market Surveillance Section



# U.S. COMMODITY FUTURES TRADING COMMISSION

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Division of  
Market Oversight

Richard A. Shiltz  
Director

CFTC letter No. 06-09  
May 5, 2006  
No-Action  
Division of Market Oversight

Mr. Michael Sackheim, Esq.  
Sidley Austin LLP  
787 Seventh Avenue  
New York, NY 10019

Re: Request for No-Action Relief with Regard to Commodity Exchange Act Section 4a  
and Commission Regulation 150.2, Speculative Position Limits for Certain Corn and  
Wheat Futures Positions

Dear Mr. Sackheim:

As you know, pursuant to Section 4a(a) of the Commodity Exchange Act (the "Act"), the Commission establishes and enforces speculative position limits for futures and option contracts on a limited group of agricultural commodities, including corn and wheat traded on the Chicago Board of Trade ("CBOT"). Those limits are set out at § 150.2 of the Commission's regulations. Section 150.3(a) of those regulations provides that certain positions may exceed the limits, including *bona fide* hedging transactions, as defined in regulation 1.3(z). Section 1.3(z)(3) provides that, in addition to certain enumerated hedging transactions listed in § 1.3(z)(2), the Commission may recognize other transactions and positions as *bona fide* hedging in accordance with requirements set out in § 1.47 of the regulations.

By letter dated March 1, 2006, you have requested, on behalf of your client, DB Commodity Services LLC ("DBCS"), no-action relief with respect to certain positions in CBOT corn and wheat futures, to be held by the DB Commodity Index Tracking Master Fund ("Master Fund"), a commodity pool owned and managed by DBCS. Specifically, you have asked that the Division of Market Oversight ("Division") to confirm that it will not recommend to the Commission that enforcement action be taken with respect to such corn and wheat futures positions if the positions (in any month other than the spot month) are in excess of the applicable speculative position limits.<sup>1</sup> For the reasons, and subject to the conditions, described in the remainder of this letter, the Division hereby grants the no-action relief you have requested.

## Factual Background

<sup>1</sup> While contending that the futures positions to be held by the Master Fund are "akin" to *bona fide* hedging positions, your no-action request specifically does not constitute a request pursuant to regulation 1.47 to classify those positions as *bona fide* hedging under regulation 1.3(z)(3).

REPORT: EXCESSIVE SPECULATION  
IN THE WHEAT MARKET  
EXHIBIT #6

### The Funds

As stated in your letter, DBCS is the registered commodity pool operator ("CPO") with respect to both the Master Fund and the DB Commodity Index Tracking Fund ("Investor Fund"). The assets of the Master Fund consist of a portfolio of futures contracts on the commodities comprising the Deutsche Bank Liquid Commodity Index™ – Excess Return ("the index") and cash or cash equivalents. The Master Fund's only investor is the Investor Fund and the only assets of the Investor Fund are common units of beneficial interest ("shares") in the Master Fund. These shares are listed on the American Stock Exchange ("Amex") and are available for purchase by the public. The Investor Fund currently has \$2 billion worth of shares registered with the Securities and Exchange Commission ("SEC") to be offered and sold to the public.<sup>2</sup>

### The Index

You have stated that the index is composed of notional amounts of the following commodities in the following percentages: crude oil (35%), heating oil (20%), aluminum (12.5%), gold (10%), corn (11.25%) and wheat (11.25%). You have described the index as "a widely used commodity index and ... an internationally referenced economic benchmark." The Master Fund will track the index over time by holding long futures positions that correspond to the commodities comprising the index.<sup>3</sup>

Both the index and the Investor Fund are highly transparent. The index sponsor calculates the intra-day index level every 15 seconds during the trading day, based on Reuters quotes for the underlying futures contracts. The intra-day and daily closing levels of the index are available on Reuters, Bloomberg, Deutsche Bank's website and Amex's website. Information on the daily closing and settlement prices of the futures contracts that make up the index is available on the websites of the respective futures exchanges and other sources and real time data on the contracts is available by subscription from Reuters and Bloomberg. Any adjustments to the index are published on Deutsche Bank's website.

Information regarding the shares in the Investor Fund is freely available on websites maintained by Amex, DB London and the Investor Fund itself. The Amex website makes available: the daily net asset value for the Investor Fund; number of shares outstanding; daily trading volume; intra-day and closing prices; the prior day's net asset value; current index value; indicative intra-day net asset value per share; and a link to the Fund's prospectus. The Investor Fund website includes the following information regarding the Fund: the prior business day's net asset value and index value, and the reported closing price; the mid-point of the bid-ask price in relation to the net asset value as of the time the net asset value is calculated; calculation of the premium or discount of such price against such net asset value; the prospectus; and other applicable quantitative information. DBCS, the CPO of the Investor Fund, also publishes or causes to be published the net asset value of the Fund and the net asset value per share daily, as well as the

<sup>2</sup> The Master Fund and the Investor Fund filed a joint registration statement with the SEC and are sometimes referred to in your letter as "the Funds."

<sup>3</sup> The futures contracts and the respective exchanges where they are traded include: crude oil and heating oil on the New York Mercantile Exchange ("NYMEX"), gold on the COMEX division of the NYMEX, aluminum on the London Metals Exchange ("LME"), and corn and wheat on the CBOT.

indicative intra-day net asset value every 15 seconds throughout the trading day. All of the foregoing is published on Reuters, Bloomberg and the Deutsche Bank's website.

#### **Unique Regulatory Oversight**

You have pointed out that, in addition to DBCS being regulated as a CPO by the Commission and the National Futures Association, both the Investor Fund and the Master Fund are subject to "unique federal and self-regulatory oversight" by virtue of the shares being listed on Amex, a national securities exchange regulated by the Securities and Exchange Commission ("SEC"). Thus, both the Investor Fund and the Master Fund are regulated by both the SEC and the National Association of Securities Dealers ("NASD"). In particular, the offer and sale of shares in the Investor Fund, and the secondary market therein, are subject to the comprehensive federal securities regulatory scheme administered by the SEC and the NASD (in its capacity as a self-regulatory organization) and all shareholders invest as securities customers through an SEC-registered broker-dealer (or other entity exempt from broker-dealer registration, such as a bank).

#### **Trading Activities**

You have stated that the Master Fund is "not an actively managed commodity pool (or other 'speculator' within the intent of Commission regulation 1.3(z))" because the Fund does not seek to generate positive returns under any and all market conditions, or based on the CPO's investment skill. Rather, the Master Fund's investment objective is simply to track the index over time "whether the index is rising, falling or flat." To that end, the Master Fund will acquire long futures position in the six commodities making up the index, in the proportions described in the Investor Fund's prospectus. You point out that, because the Master Fund is not an actively managed pool, it "does not use any third party commodity trading advisor, does not charge any performance or incentive fee based on the profitability of its portfolio, does not utilize a discretionary trading program or any other investment or trading methodology, and does not use leverage in connection with its futures portfolio."

You further note that regulation 1.3(z) provides in relevant part that hedging transactions "are economically appropriate to the reduction of risks in the conduct and management of a commercial enterprise."<sup>4</sup> You point out that the Master Fund's only objective is to track the index over time (through acquiring long futures positions), using a nondiscretionary methodology, with no investment objective to "achieve capital appreciation." Therefore, you suggest that the Fund should be viewed as "akin to a commercial enterprise that is in the business of investing and reinvesting in long futures positions in the index commodities," with "no intent to speculate ... in the futures market" and which presents no "danger of excessive speculation."

#### **Maximum Size of Corn and Wheat Futures Positions**

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<sup>4</sup> In that context, you point to the Commission's 1987 interpretation clarifying the hedging definition "to include certain investment strategies of institutional investors, such as through acquiring a long position in Treasury bond futures to hedge against interest rate exposure." 52 FR 27195 (July 20, 1987). You suggest that the Master Fund's activities are analogous to the financial hedging activities described in the 1987 interpretation.

You state that the Funds currently have registered \$2 billion worth of shares in the Investor Fund, to be offered and sold to the public. Based on the percentages of the index represented by corn and wheat, and current price levels, that amount of shares translates to maximum long CBOT corn and wheat futures positions of approximately 17,500 corn contracts and 11,000 wheat contracts. However, there is no maximum amount of capital the Funds may accept (and accordingly, no maximum size of long positions the Master Fund may acquire) because the CPO intends to register additional shares in the event the supply of currently registered shares is exhausted. You have proposed that, in the event such additional shares are created, requiring additional long futures positions, DBCS be permitted to notify the Division, in reliance on the no-action relief granted in this letter. Upon receipt of such request, the Division could either confirm that the increased position size is subject to the relief granted in this letter and is, therefore, permitted, or inform DBCS that such increased position size is not subject to the relief and, therefore, is not permitted. In either event, DBCS would be able to learn the Division's decision through a simple notice filing and would not be required to reapply for no-action relief *de novo*.

You have also represented that DBSC "will not carry into the spot months any positions in wheat and corn futures contracts in excess of the [spot month] positions [limits] set forth in Commission Rule 150.2."

#### Conclusion

For the reasons, and subject to the conditions, described in this letter, the Division has determined that it will not recommend to the Commission that enforcement action be taken for violation of Commission regulation 150.2 with respect to the corn and wheat futures trading activity conducted by DBCS, and the futures positions held by the Master Fund, if those positions (in any month other than the spot month) are in excess of the applicable speculative position limits. In particular, the conditions governing this no-action relief include:

- The futures trading activity passively tracks a widely recognized commodity index;
- The futures trading activity is unleveraged;
- The futures trading does not result in price exposure for the Master Fund (*i.e.*, the price exposure is passed on to the shareholders in the Investor Fund);
- As noted, positions in excess of the speculative limits are not carried into the spot month;
- Both the index and the Investor Fund are highly transparent;
- Both the Investor Fund and the Master Fund are subject to unique federal and self-regulatory oversight by virtue of the shares being listed on Amex, and thereby subject to regulation by the SEC and the NASD; and
- The Master Fund will hold maximum long CBOT corn and wheat futures positions not exceeding 17,500 corn contracts and 11,000 wheat contracts.



The position taken herein is based upon the representations you have made to the Division. Any different, changed or omitted facts or conditions, including revisions to the legal requirements applicable to speculative position limits and exemptions thereto, might require the Division to reach a different conclusion. You must notify the Division immediately in the event that there is any significant change from the facts presented to us concerning the activities of DBCS, the Master Fund or the Investor Fund, as described in your letter. Further, this letter represents the position of the Division of Market Oversight only and does not necessarily represent the views of the Commission or any other division or office of the Commission.

If you have any questions concerning this correspondence, please contact Donald H. Heitman, an attorney on my staff, by email at [dheitman@cftc.gov](mailto:dheitman@cftc.gov), or by phone at (202) 418-5041.

Very truly yours,

Richard A. Shilts  
Director  
Division of Market Oversight



# U.S. COMMODITY FUTURES TRADING COMMISSION

Three Lafayette Centre  
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[www.cftc.gov](http://www.cftc.gov)

Division of  
Market Oversight

CFTC letter No. 06-19  
September 6, 2006  
No-Action  
Division of Market Oversight

Re: Request for No-Action Relief with Regard to Commodity Exchange Act Section 4a  
and Commission Regulation 150.2, Speculative Position Limits for Certain Soybean and  
Wheat Futures Positions

Dear :

As you know, pursuant to Section 4a(a) of the Commodity Exchange Act (the "Act"), the Commission establishes and enforces speculative position limits for futures and option contracts on a limited group of agricultural commodities, including corn, soybeans and wheat traded on the Chicago Board of Trade ("CBOT"). Those limits are set out at § 150.2 of the Commission's regulations.

By letter dated June 13, 2006, supplemented by an amended letter dated July 14, 2006, you have requested, on behalf of your client, X, no-action relief with respect to certain positions in CBOT corn, soybeans and wheat futures, to be held pursuant to P, a proprietary commodity investment program created by X.<sup>1</sup> Specifically, you have asked that the Division of Market Oversight ("Division") confirm that it will not recommend to the Commission that enforcement action be taken with respect to such corn, soybean and wheat futures positions if the positions (in any month other than the spot month) are in excess of the applicable speculative position limits. For the reasons, and subject to the conditions, described in the remainder of this letter, the Division hereby grants the no-action relief you have requested.<sup>2</sup>

## Factual Background

### The P Investments

As described in your letter, X's clients can invest in the P program in several ways. X is a registered commodity pool operator ("CPO") and commodity trading advisor ("CTA"). A client can invest in P through a separate account with a futures commission merchant ("FCM"), managed by X in its CTA capacity. A client can also invest in P through a fund that could be

<sup>1</sup> In addition to your June 13 and July 14 letters, including Exhibit A, "New 2006 P Weights," and Exhibit B, a copy of a "Confidential Private Placement Memorandum," dated December 2005, you have provided the Division with additional information through various e-mail and telephone contacts.

<sup>2</sup> As you know, the CBOT has adopted speculative position limit rules that mirror the limits set out in Commission regulation 150.2. This letter does not provide relief with respect to those CBOT rules. Therefore, X will have to secure relief from the CBOT's speculative position limits directly from the exchange.

**REPORT: EXCESSIVE SPECULATION  
IN THE WHEAT MARKET  
EXHIBIT #7**

operated by X in its CPO capacity. Finally, a client can invest in P through a fund operated by a third party, which is advised or sub-advised by X in its CTA capacity. Such a fund could be offered in accordance with the Commission's Part 4 rules or pursuant to an exemption from certain provisions of the Part 4 rules, such as, for example, Rule 4.7, Rule 4.13(a)(3) or Rule 4.13(a)(4) (a "Rule 4.7 pool," a "Rule 4.13(a)(3) pool," or a "Rule 4.13(a)(4) pool").<sup>3</sup>

X manages these various funds and individual and pool accounts pursuant to P. X currently manages over \$1 billion of assets pursuant to P. The no-action relief you have requested would apply to the aggregate of all positions managed or traded in accordance with P.

### The P Strategy

You have stated that P's rules require investments in three commodities in each of the following six tangible commodity groups: agricultural (grains and grain byproducts); livestock (meats and animals); energy (the petroleum complex and natural gas); precious metals (gold, silver, and the platinum complex that are primarily held for investment or used in jewelry); industrial metals (copper, aluminum, zinc, nickel, tin and lead that are used almost exclusively for industrial purposes); and soft commodities and foods (coffee, sugar, cocoa and orange juice, as well as cotton and lumber). P's rules require further that investments in no one of these tangible commodity groups constitute more than 35% of P and that no single commodity constitute more than 70% of its respective tangible commodity group. These tangible commodity group weightings and individual commodity weightings are calculated in accordance with a mathematical formula that blends two-thirds of five-year global production and one-third of five-year trading volume of futures contracts traded in U.S. dollars. Both production and trading volume are valued using the average commodity prices during the preceding year. Weightings of each commodity group and of each commodity are reset at the beginning of each year, and each commodity is rebalanced to its target weighting if its actual weighting deviates from the target weighting by more than 10% of its intended weight. X reserves the right to assign different bands to each commodity, but historically has used this single band (+/-10%) to quantify acceptable deviation for all commodities in all cases.

You note that, during 2005, the percentage of corn, soybean or wheat futures contracts was rebalanced a total of ten times, in each case in accordance with P's predetermined rebalancing threshold, *i.e.*, when the actual weighting of the respective commodity deviated from the target weighting relative to all other commodities by more than 10%. You point out that rebalancing never reflects a view that a position in a particular commodity is trading at a discount to its fair value or that a position in a particular commodity will be more profitable than a position in another commodity. As described in Exhibit A to your letter, since the most recent reset early in

<sup>3</sup> In the case of a Rule 4.13(a)(4) pool, one such investment structure is described in Exhibit B, the Confidential Private Placement Memorandum that accompanied your letter. According to that Memorandum, Y, Inc. serves as the Investment Manager to (the "Fund") and (the "Master Fund"), with responsibility for the day-to-day management of the Fund's investments and administrative affairs, while X serves as the sub-advisor to the Fund and the Master Fund. Subject to the general supervision of the Investment Manager, X has complete discretion and responsibility with respect to the Fund's and the Master Fund's investments. Investors purchase membership interests in the Fund and all of the capital of the Fund is, in turn, invested in the Master Fund. The assets of the Master Fund consist of a long-only portfolio of exchange-traded, U.S. dollar-denominated futures and forward contracts in tangible commodities.

2006, corn futures contracts account for 3.94% of P, soybean futures contracts account for 4.84% and wheat futures contracts account for 4.72%.

You have stated that X's clients are furnished with a level of disclosure and transparency about P appropriate for the product, based upon the provisions of the Act and the CFTC's Part 4 rules. For example, X provides each prospective separate account client with a CTA disclosure document, even if the client is a "qualified eligible person" as defined in Rule 4.7. A separate account client also receives account statements no less frequently than monthly from the FCM carrying the account. In the case of an offering that is not subject to an exemption from the Part 4 rules, prospective participants receive a pool disclosure document containing the information required under the Commission's Part 4 rules, as well as periodic statements and a certified annual report of the fund's financial condition. In the case of a Rule 4.7, Rule 4.13(a)(3), or Rule 4.13(a)(4) fund, prospective participants receive a private placement memorandum (see Exhibit B), periodic statements, and a certified annual report of the fund's financial condition, even if not required under the relevant rules.

#### **Trading Activities**

You have stated that P is a long-only, diversified tangible commodity futures trading program that is designed to maintain consistent, fully collateralized exposure to tangible commodities as an asset class. P is intended to provide diversification for traditional portfolios of equities and fixed income instruments, as well as some protection from inflation risk. To implement P, X enters into long positions in a diversified basket of U.S. dollar-denominated futures and forward contracts on tangible commodities that have an annual trading volume in excess of 250,000 contracts. These contracts are traded on both U.S. and non-U.S. exchanges. In connection with managing accounts pursuant to P, X does not seek to incur any additional price exposure for itself in the futures markets, but rather seeks to offset the exposure it incurs in the course of offering P investments to its clients, by entering into exchange-traded transactions in the futures markets. P does not seek to generate speculative profits by predicting price trends.

You further state that P requires all futures positions to be rolled into later contract months prior to the last trading day or first notice of delivery day, whichever is earlier. You note that, to prevent the market from front running any of the roll orders, there has not been any fixed roll date and time. Rather, X has exercised its judgment in determining the precise timing of the roll, as well as the subsequent contract month to which the positions will be rolled. In that regard, you note that X evaluates such factors as liquidity, prevailing prices and spreads, and other market conditions. Nonetheless, you represent that positions in front month futures contracts are typically rolled during the week before the earlier of the last trading day or the first notice of delivery day, and that positions are never held into the delivery month.

#### **Maximum Size of Corn, Soybean and Wheat Futures Positions**

You have stated that, in view of the growth of interest in P and the development and marketing of new products, X anticipates that the amount of assets it manages pursuant to P could reach \$4.5 billion over the next 12 months. At that level, the corn, soybean and wheat positions held

pursuant to P could exceed the Commission's speculative position limits.<sup>4</sup> Given the foregoing considerations, and X's critical need to use futures contracts to offset its exposure, you have requested that X be allowed to hold: (1) in CBOT corn futures, a net long position of, (a) up to 17,500 contracts for a single month (other than the spot month) and (b) up to 27,000 contracts for all months combined (with no change in the spot month limit); (2) in CBOT soybean futures, a net long position of, (a) up to 9,000 contracts for a single month (other than the spot month) and (b) up to 15,000 contracts for all months combined (with no change to the spot month limit); and (3) in CBOT wheat futures, a net long position of, (a) up to 11,000 contracts for a single month (other than the spot month) and (b) up to 13,000 contracts for all months combined (again, with no change to the spot month limit). You have stated that these limits reflect a conservative estimate of X's reasonably anticipated requirements for meeting its risk management needs for the near future.

#### Analysis

You note that the P strategy, and the relief you have requested, are similar to the index trading program described, and the relief granted, in CFTC Letter 06-09.<sup>5</sup> First, as in the program described in CFTC Letter 06-09, P is a long-only, fully collateralized trading strategy. Thus, the value of the long futures positions will not exceed the aggregate amount of cash or cash equivalents (such as cash deposited in a money market mutual fund) set aside in an identifiable manner in respect of such futures positions plus any accrued profits on such futures positions held at the FCM. The unleveraged nature of the strategy is indicative of the absence of speculative intent and also minimizes any risk that these futures positions could be subjected to a forced liquidation due to adverse market movements.

Second, you point out that the cash market underlying the CBOT's corn, soybean and wheat futures contracts has a high degree of demonstrated liquidity relative to the size of X's anticipated futures positions. The Commission has traditionally recognized in its market oversight activities that the liquidity of the underlying cash market and the potential for substantial arbitrage positions between the cash and futures markets mitigate the influence that large futures positions may have on futures prices.

Third, you state that P's rules-based, non-speculative trading methodology is no more conducive to market manipulation or disruption than other currently recognized non-speculative strategies. As described, P utilizes a predetermined set of mathematical rules and criteria for calculating the weightings for tangible commodity groups and individual commodities and for the annual reset and any rebalancings. Thus, X resets the weightings annually based upon the economic significance and liquidity of each tangible commodity group in relation to all other tangible commodity groups, and of each commodity within a particular tangible commodity group in

<sup>4</sup> Under Rule 150.2, the speculative position limit in CBOT corn futures contracts, separately or in combination, net long or short, is 600 contracts for the spot month, 13,500 contracts for a single month other than the spot month, and 22,000 contracts for all months combined. The speculative position limit in CBOT soybean futures contracts, separately or in combination, net long or net short, is 600 contracts for the spot month, 6,500 contracts for a single month other than the spot month, and 10,000 contracts for all months combined. The speculative position limit in CBOT wheat futures contracts, separately or in combination, net long or net short, is 600 contracts for the spot month, 5,000 contracts for a single month other than the spot month, and 6,500 contracts for all months combined.

<sup>5</sup> CFTC No-Action Letter No. 06-09, 2006 WL 1419389 (CFTC), May 5, 2006.

relation to all other commodities in such group, not on the basis of speculative market views, price targets, or price trends. Similarly, any periodic rebalancing is implemented in accordance with a predetermined numerical threshold and not on the basis of speculative market views, price targets, or price trends.

Fourth, you note that, as with the program described in CFTC Letter 06-09, implementing the P strategy should not pose any concerns about trading activity in the spot month because X rolls all long futures positions into later contract months prior to the last trading day or first notice of delivery day, whichever is earlier. Thus, X is not requesting any increase in the spot month limit.

Finally, you state your belief that granting this request is supported by, and consistent with, the Division's no-action position in CFTC Letter No. 06-09 and that the facts and circumstances presented in your request are analogous to those presented in that recent no-action letter.<sup>6</sup> Consistent with the relief granted in CFTC Letter No. 06-09, you have also requested that, in the event of subsequent growth in the amount of assets under management pursuant to P requiring additional long futures positions, X be permitted to notify the Division in reliance on the no-action relief granted in this letter. Upon receipt of such a request, the Division could either confirm that the increased position size is permissible pursuant to the relief granted herein or is not permissible unless X requests and receives additional no-action or other relief. In either event, X would be able to learn the Division's decision through a simple notice filing and would not be required to reapply for no-action relief *de novo*.

### Conclusion

For the reasons, and subject to the conditions, described in this letter, the Division has determined that it will not recommend to the Commission that enforcement action be taken for violation of Commission regulation 150.2 with respect to the corn, soybean and wheat futures trading activity conducted by X, and the futures positions held in connection with the P strategy, if those positions (in any month other than the spot month) are in excess of the applicable speculative position limits. In particular, the conditions governing this no-action relief include:

- The futures trading activity passively tracks the P strategy;
- The P strategy continues to reflect a broadly diversified basket of tangible commodities, calculated and rebalanced based on an objective, predetermined mathematical formula, as described in your letter;
- The futures trading activity is unleveraged;
- The futures trading does not result in price exposure for X (*i.e.*, the price exposure is passed on to the individual account holders or the various pool participants, including investors in funds subject to, or exempt from, the Part 4 rules, as the case may be);

<sup>6</sup> Also, consistent with the no-action request that gave rise to CFTC Letter 06-09, your request does not constitute a request pursuant to Commission regulation 1.47 to classify the positions in question as *bona fide* hedging under Commission regulation 1.3(z)(3).

- As noted, positions in excess of the speculative limits are not carried into the spot month;
- X's clients are provided with at least the level of disclosure and transparency described in your letter; and
- The maximum long CBOT corn, soybean and wheat futures positions held pursuant to the no-action relief do not exceed 17,500 contracts for a single non-spot month (27,000 contracts for all months combined) in corn, 9,000 contracts for a single non-spot month (15,000 contracts all months combined) in soybeans, and 11,000 contracts for a single non-spot month (13,000 contracts all months combined) in wheat.

The position taken herein is based upon the representations you have made to the Division. Any different, changed or omitted facts or conditions, including revisions to the legal requirements applicable to speculative position limits and exemptions thereto, might require the Division to reach a different conclusion. The relief granted in this letter applies only with respect to regulation 150.2 and does not excuse X from complying with any otherwise applicable provisions of the Act or Commission regulations. You must notify the Division immediately in the event that there is any significant change from the facts presented to us concerning the activities of X, or the Funds, as described in your letter. Further, this letter represents the position of the Division of Market Oversight only and does not necessarily represent the views of the Commission or any other division or office of the Commission.

If you have any questions concerning this correspondence, please contact Donald H. Heitman, an attorney on my staff, by email at [dheitman@cftc.gov](mailto:dheitman@cftc.gov), or by phone at (202) 418-5041.

Very truly yours,

Richard A. Shilts  
Director  
Division of Market Oversight



### National Grain and Feed Association

1250 Eye St., N.W., Suite 1002, Washington, D.C. 20005-3922, Phone: (202) 289-0873, FAX: (202) 289-5388, Web Site: [www.ngfa.org](http://www.ngfa.org)

Statement of the  
National Grain and Feed Association  
to the  
Commodity Futures Trading Commission  
April 22, 2008

The National Grain and Feed Association (NGFA) appreciates the opportunity to submit recommendations to the Commodity Futures Trading Commission (CFTC) concerning the performance of agricultural futures markets and impacts on commercial grain hedgers. We applaud the CFTC for holding this roundtable discussion to examine whether the futures markets are properly performing their risk management and price discovery roles. The NGFA's findings and recommendations are as follows:

- The NGFA strongly recommends a moratorium on all hedge exemptions for passively-managed, long-only investment capital entering agricultural futures markets. For funds already approved for hedge exemptions, the NGFA strongly recommends against expansion of hedge exemptions beyond levels already approved by the CFTC. The NGFA also recommends that all passively-managed, long-only investment capital participate in futures on a dollar-for-dollar, unleveraged basis, with all investment capital fully margined. This is consistent with rules proposed by CFTC late last year in its proposal to establish a hedge exemption for pension and index funds, and with rules governing the two funds that currently have hedge exemptions.
- The changes instituted by CFTC in its Commitments of Traders (CoT) report in early 2007 to identify "Index" participants was a very positive step, and the report has become a useful tool for market participants. The NGFA respectfully requests that CFTC analyze the report to assure that all long-only, passively-managed investment capital entering agricultural futures markets is correctly reported to the Commission and properly categorized and reported in the CoT report's "Index" category. The NGFA further requests that the Commission fully and clearly define futures market activity reported in each existing category of the report; and consider whether any additional detail/categories added to the report would provide additional clarity for market participants.
- The NGFA does not believe the pending storage rate (premium charge) changes for the CBOT corn, soybean and wheat contracts accurately reflect the real costs and value of storage capacity. The NGFA will ask the CME Group to poll the grain handling industry immediately to determine accurate commercial storage values. If warranted under current conditions, the NGFA will ask the CME

**REPORT: EXCESSIVE SPECULATION  
IN THE WHEAT MARKET  
EXHIBIT #8**



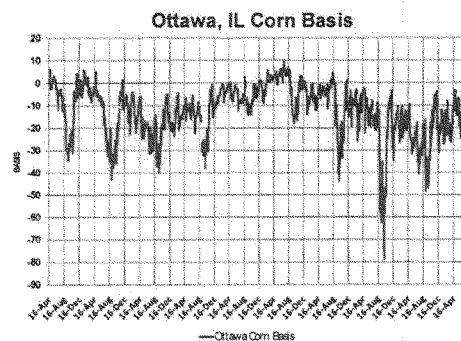
Group to implement those rates, with CFTC approval, in lieu of currently pending storage rate increases for corn and soybean contracts, and also for the wheat contract, as soon as possible to enhance cash/futures convergence.

- The NGFA generally supports the concept of exchange-cleared swaps as a mechanism that creates the opportunity to spur innovation and new risk management products.
- The NGFA is supportive of repealing restrictive CFTC regulations on agricultural trade options. In their place, the NGFA supports rules allowing commercial participants (elevators, producers, processors) to engage in ATOs in the course of their businesses.

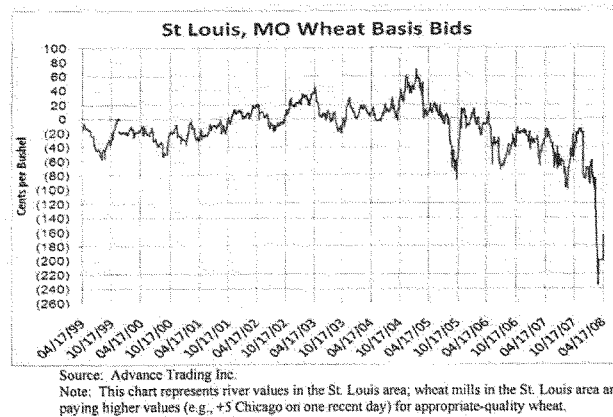
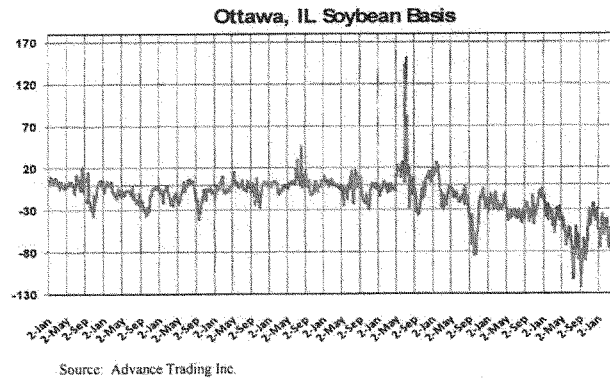
#### Convergence and Basis Issues

The NGFA's member companies are elevators and processors, many of them first-purchasers of grains and oilseeds from producers. These NGFA-member firms rely on well-functioning futures markets for price discovery and to help hedge price and inventory risk. One of the bedrock fundamentals on which hedging strategies are predicated is consistent and reliable convergence between cash and futures prices.

Today, that previously reliable relationship between cash and futures has deteriorated to a point where many commercial grain hedgers are questioning the effectiveness of hedging using exchange-traded futures. Genuine convergence occurs less often and only for short periods of time. The band, or range, of convergence has widened due to several factors, including: 1) higher and more volatile transportation costs; 2) demand for storage created by biofuels growth; and 3) the futures market running ahead of cash values due to passively managed, long-only investment capital. The following charts illustrate that basis has become more volatile and "weaker" than demonstrated historically – corn, to some extent, and soybeans and wheat more dramatically – thus, convergence has deteriorated:



Source: Advance Trading Inc.



This lack of convergence – or “divergence” as some are calling it – is evident in wider basis levels between cash and futures. Cash bids to producers at any given location and time still reflect the true value of commodities, but rapid advances in futures price levels have widened basis to levels not historically expected. This wider basis can sometimes make commodity prices appear “too cheap” at the local grain elevator.

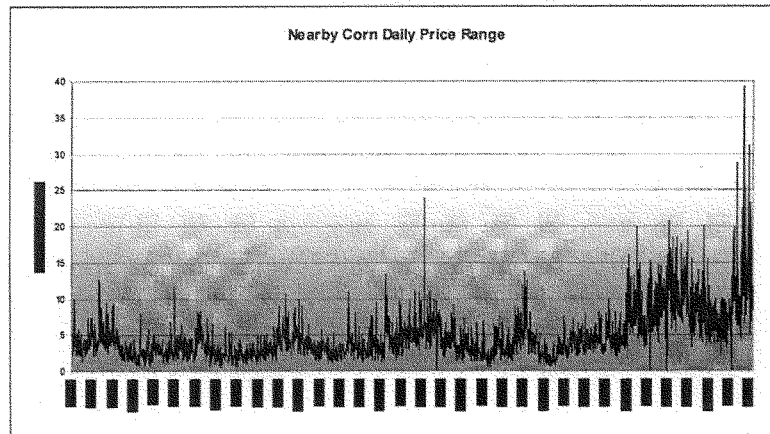
As mentioned above, many factors are at work to influence price levels and basis: transportation and fuel costs; changes in supply/demand fundamentals; carry-over inventory levels; farmer selling; storage rates; and more. Changes in any of these factors can result in significant changes to basis levels, and today we are seeing many changes occurring simultaneously. However, we believe that one new factor – the entry of large

amounts of long-only, passively-managed investment capital into agricultural futures markets – is causing a disruption in markets.

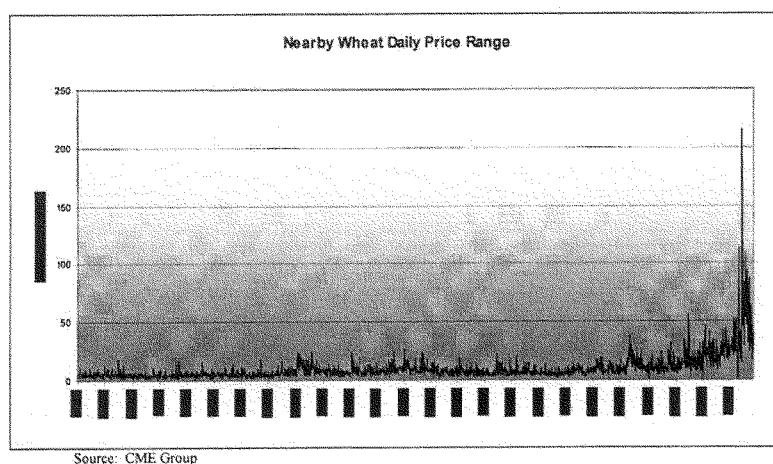
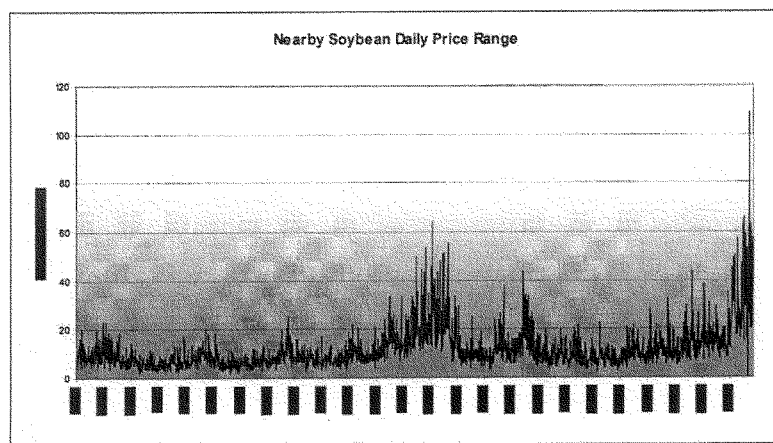
#### **Financial Liquidity Issues**

Decreased hedging efficiency due to deteriorating convergence and unpredictable basis patterns are not the only concerns for commercial grain hedgers today. As a result of significantly higher futures prices, driven in part by investment capital, elevators who purchase cash grain from farmers for deferred delivery have been hit with extremely large margin calls on their hedge accounts. Long-only investment funds account for a significant share of open interest in the CBOT grains and oilseeds contracts. These passively-managed, long-only contracts are not for sale at any price for extended periods of time, resulting in elevated prices not reflective of demand, increased speculative interest in the market, increased volatility, and pressure on banking resources to fund margins.

The following charts show the increased volatility for corn, soybean and wheat futures in recent months:



Source: CME Group



To finance inventory purchases and make margin calls, commercial grain hedgers' borrowing needs today are several times normal levels. Elevators have reached their borrowing limits and some lenders have reached the limit of amounts they can lend to the commercial grain sector. Additional futures price advances – due to supply/demand shocks, bad weather, or ever-larger amounts of investment capital – could lead to severe financial stress. Even today, some elevators lack the capital to finance additional hedges, so they have been forced to restrict or eliminate deferred purchase bids to producers. If

the situation continues, producers who lack access to cash forward contracts they have come to expect will increasingly be frustrated in efforts to optimize their marketing opportunities at a time when cash prices are very attractive.

#### **Moratorium on Hedge Exemptions**

For the reasons detailed above, the NGFA opposed CFTC proposals issued late last year to increase federal speculative position limits and to create a new hedge exemption for index and pension funds. Today, we believe action is urgently needed to allow agricultural markets to “take a break” and adjust before additional large amounts of investment capital find their way into agricultural futures.

We are recommending a **moratorium on all hedge exemptions for long-only, passively-managed investment capital entering agricultural futures markets**. For funds already approved for hedge exemptions, the NGFA strongly recommends against expansion of hedge exemptions beyond levels already approved by the CFTC. The NGFA recommends that long-only investment capital participate in futures on dollar-for-dollar, unleveraged basis, with all investment capital fully margined, consistent with rules suggested by the CFTC late last year in its proposal to establish a new hedge exemption for pension and index funds, and with rules for those funds already possessing hedge exemptions.

#### **Commitments of Traders Report**

Early last year, the CFTC began publication of a supplemental Commitments of Traders report with a new “Index” category to report investment capital. The NGFA’s member companies were extremely pleased with that new category, believing that transparency in the marketplace is of benefit to all participants. In particular, the new “Index” category was helpful in assisting commercial grain hedgers to develop their risk management strategies based on supply/demand fundamentals, rather than on speculative investment capital.

We believe that today’s market environment calls for a re-examination of the CoT report. While some suggest that investment capital’s share of open interest in agricultural futures contracts has not increased in recent years, we are skeptical of that claim. We suspect that some activity that rightly belongs in the “Index” category could now be showing up in other CoT report categories. For that reason, **we respectfully request that the CFTC analyze in detail the reporting it receives from market participants to determine if all long-only investment capital is reflected in the “Index” category**. Additionally, we request that CFTC fully and clearly define futures market activity reported in each existing category of the report; and consider whether any additional detail/categories added to the report would provide additional clarity for market participants.

### **Storage Rates**

While a number of changes to CBOT contracts have been suggested that might enhance convergence, we believe that one of the most readily available and effective tools is adjustments to storage rates (premium charges). As the result of findings of its Futures Market Performance Task Force last fall, the NGFA recommended at that time an increase in monthly storage rates for corn and soybean contracts from 4.5 cents per bushel to approximately 5 cents per bushel – the same increase already had been adopted by the CME Group for the wheat contract. The CME Group subsequently agreed with this finding and is proceeding to increase its corn and soybean storage rates, with CFTC approval just recently received.

We believe the market situation now has changed, and that additional action to increase storage rates is needed to enhance convergence. We believe that neither the current nor the pending storage rates reflect the true value of commercial space. To help remedy the situation, the NGFA would like to work cooperatively with the CME Group to determine what increased storage rate is most appropriate to ensure an efficiently functioning contract and to enhance convergence.

From time to time, the CME Group has surveyed industry for prevailing storage rates to help establish rates for the grain and oilseed contracts. The most recent such survey was conducted in early fall of 2006. Now that commodity prices have risen significantly, **the NGFA recommends that the CME Group poll the grain handling industry immediately to determine commercial storage rates.** The NGFA will ask the CME Group to implement higher storage rates if supported by the updated poll, with CFTC approval, in lieu of currently pending storage rate increases for corn and soybean contracts, and also for the wheat contract, as soon as possible to enhance cash/futures convergence.

### **Exchange-Cleared Swaps**

The NGFA, in principle, is supportive of the concept of allowing agricultural commodity swaps to be cleared on-exchange. We believe that granting exchanges this regulatory flexibility could be a catalyst for development of new risk management products of benefit to commercial grain hedgers. In a changed market environment, innovative ideas like this may help ease the market's transition during a time of broad change and may enhance short-term market balance.

### **Agricultural Trade Options**

In November of 1999, the CFTC published rules governing agricultural trade options. Since that time, just one entity registered as an agricultural trade options merchant, and that registrant now has withdrawn. Clearly, the net worth requirements and the burdensome reporting requirements contributed to making ATOs unworkable for potential participants.

In today's marketplace, we believe access to a workable ATO program could give producers additional marketing opportunities, spur new-product innovation and help ease financial liquidity concerns. For example, an ATO contract between a producer and a country elevator could be beneficial if the producer has weather-related production problems, or if he wants to maintain flexibility on delivery locations. ATOs also could help ease financial liquidity concerns of elevators by attracting new capital into agricultural markets without burdensome margining requirements.

We understand that CFTC staff may be considering a proposal that would rescind the burdensome regulations published in 1999 in favor of a more flexible regulatory approach under which commercial participants such as elevators, producers and processors could enter into ATOs in the course of their businesses. In today's market environment, we believe that approach makes sense. We would support the Commission moving to ease the ATO regulations.

#### **Summary**

Ultimately, the solution to recent market upheaval may simply be time. In time, the market may respond to new realities. The market likely will create new ways to deploy capital in agriculture. In time, industry may expand storage, the CME Group may implement enhancements to their contracts. Without a doubt, market participants will create new products for risk management that reflect the broad changes in the agricultural landscape – transportation, biofuels, major acreage shifts, to name a few. The NGFA will continue its work to identify additional potential responses to assist commercial grain hedgers dealing with the volatility and financial stresses of today's markets, whether they be changes to futures contracts, regulatory action or some other course.

In the shorter term, there are real disconnects and real stresses, in particular on the commercial grain hedging sector. We believe these stresses call for action along the lines outlined above that will help build a bridge to new market realities. Failing to do so could have serious consequences for all sectors of agriculture, including producers and the elevators who work with them to facilitate efficient marketing and risk management for the grain sector.



## American Bakers Association

*Serving the Baking Industry Since 1897*

May 7, 2008

The Honorable Walt Lukken  
Commodity Futures Trading Commission  
Three Lafayette Centre  
1155 21st Street, NW  
Washington, DC 20581

Re: CFTC Agricultural Forum, April 22, 2008:  
Volatility within the Commodity Futures Market

Chairman Lukken:

The American Bakers Association (ABA) appreciates the opportunity to provide these comments for the record in response to the concerns raised during the April 22, 2008, Commodity Futures Trading Commission (CFTC) Agricultural Forum.

ABA is the leading advocate for the baking industry. It has been the voice of the baking industry since 1897, representing its members before the U.S. Congress, federal agencies, state legislatures, and international regulatory authorities. ABA addresses issues facing the baking industry and initiates positive reforms benefiting the industry and its customer, the consumer.

ABA member companies produce approximately 85% of all baked goods consumed in the United States. Membership includes large and small producers of all segments of grain-based foods, from bread and rolls to crackers, tortillas, sweet goods and other baked food items.

ABA commends CFTC for holding the April 22 forum to discuss current commodity market concerns, including extreme volatility and lack of convergence, and for its continued efforts to safeguard participating market entities from unreasonable fluctuations within the commodity futures market. The commodities purchased and sold on the Chicago, Kansas City and Minneapolis exchanges are vital to every ABA member. It is of the utmost importance that these markets continue to be accessible to all participants and are protected against unwarranted market manipulation.

ABA submitted comments in January 2008 regarding the CFTC's proposed rule to increase federal speculative limits, arguing that such a move would only exacerbate the current situation. ABA strongly supports the CFTC decision announced during the April 22 agricultural forum to postpone any action on this proposed rule. ABA continues to

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**REPORT: EXCESSIVE SPECULATION  
IN THE WHEAT MARKET  
EXHIBIT #9**



oppose adoption of this rule as we believe its implementation will dramatically increase market volatility, possibly forcing traditional market hedgers, including many small businesses, out of the futures market. Unfortunately, even without implementation of this rule, volatility has dramatically increased and traditional participants have been forced to use alternative, less transparent means to purchase wheat and other commodities.

Overall, we believe that the root cause of the current dilemma is a lack of regulation upon the largest single participant in the futures markets- the long only commodity index. This index owns +60% of all futures contracts in wheat, soy, and corn. They have material length on crude oil, natural gas and precious metals. We cannot continue to ignore the impact of this futures participant. Over the counter products dwarf futures open interest and continue to distort their impact upon cash markets. Positions need to be visible (CFTC reporting) but more importantly, ABA believes that steps should be taken to ensure parity between market participants. There is increasing concern that all futures market participants are not scrutinized equally. ABA believes that clarifying definitions and roles of all market participants is an important first step in understanding the current conditions impacting today's markets. ABA asks that the CFTC investigate these abnormalities and aggressively pursue rules that will help level the playing field.

As we stated in our remarks at the forum, ABA believes the commodity exchanges have moved away from their original intent – to allow producers to sell their product in a transparent, regulated manner to physical users of the commodity. ABA is concerned that traditional market participants are being pushed out of the market – in favor of more non-traditional, new market participants that are essentially using the commodities market as a financial investment.

While we encourage active participation in the agriculture markets by all entities, we ask that you examine the way in which some of these participants enter into the futures market. If the agriculture markets are being used for a financial hedge, we advocate that the risk be spread over more than the one or two of the closest options to expiration. We suggest that the CFTC consider limiting the investment in the nearby futures months while, at same time, allowing these entities to invest in the “strip” at the total volume limitations put upon them.

We also ask the CFTC to re-examine the “hedge exemption clause” exempting certain participants from speculative position limits. ABA is opposed to increasing contract limits for any market participant, since it could create an opportunity for market monopolies.

Furthermore, ABA is troubled by the lack of convergence between futures and cash prices. By implementing the restrictions outlined above, we believe the exodus of these financial hedgers in the expiring futures option will have less of a distorting effect on the convergence between futures and cash prices. This would also prevent the nearby month from being “overvalued” due to the nonequivalent presence of these entities in those positions.

ABA CFTC statements - May 7, 2008  
Page 3

Finally, ABA is extremely apprehensive about the sustainability of our current cash trading model due to the abnormalities being experienced in the agriculture futures markets. This volatility has put an inordinate amount of financial pressure on all those that use these instruments for hedging in the cash market. If we choose to continue status quo in the agriculture futures markets over action to address these critical issues, we risk significantly altering the effectiveness of these markets and the effectiveness of those who rely on them for many years to come.

Again, ABA thanks the CFTC for the opportunity to provide these written comments following the April 22 agriculture forum. We look forward to working with CFTC staff and others in the agriculture community to ensure the strength, transparency and effectiveness of the agriculture futures markets.

Sincerely,



Robb MacKie  
President & CEO



Lee Sanders  
Senior Vice President  
Government Relations &  
Public Affairs



**Statement  
of the  
National Corn Growers Association**

**Commodity Futures Trading Commission  
Agricultural Markets Roundtable**

**Garry Niemeyer  
NCGA Corn Board**

**April 22, 2008**

**REPORT: EXCESSIVE SPECULATION  
IN THE WHEAT MARKET  
EXHIBIT #10**

Good morning, I am Garry Niemeyer and I'm here today representing the National Corn Growers Association (NCGA), as a member of NCGA's Board of Directors. NCGA represents the interests of over 32,000 corn farmers throughout the U.S.

For over 100 years the commodity exchanges have played the valuable roles of price discovery and risk management. Currently, we are witnessing a lack of convergence as contracts in the delivery months close out. This loss of convergence has many asking if the futures market still provide price discovery. And, are there still market fundamentals underpinning the current grain prices? This lack of price discovery is rippling into the farm credit system causing banks to restrict lending to elevators and farmers alike.

More recently, we have been asked shouldn't farmers be happy with \$6 corn? Absolutely, we just wish they could sell some. Over the past several years we have seen a major change in U.S. agriculture markets, specifically grain crops. In the 2005-06 marketing year, the average farm gate price for corn was \$2.00 per bushel. I can speak for everyone in agriculture when I tell you this price was too low. The latest crop year estimate now has the average corn price at \$4.00 - \$4.60. So what has changed? Most people point to ethanol and say we've increased the demand for corn driving up the price. During the last three years, corn for ethanol has increased from 1.6 billion bushels to a projected 3.1 billion. What frequently gets lost is that production has jumped to record levels as well from 11.1 billion to 13.1 billion bushels over this time. I am not sure that a 2 billion bushel increase in usage offset by a 2 billion bushel increase in production provides the necessary fundamental underpinning for a more than doubling of corn price.

All of that aside, the price of corn is what it is. But the recent run up in price has not carried equally into the cash markets. Farmers are increasingly experiencing a widening basis. For example, on Thursday, April 17<sup>th</sup> my local corn price was 25 cents under the Board of Trade for nearby contracts, but on December 08 contracts, that basis spread to approximately 50 cents. That's 25 cents under at a unit train loader, not a country elevator. The recent run on corn prices has many far reaching impacts beyond my current marketing plan.

We frequently hear stories of elevators facing serious financial problems and have even heard of a few elevators failing. Other elevators are straining their credit limits; are offsetting their hedge positions, frequently at a loss; or as I mentioned earlier, are spreading the basis. The most troubling development is the restrictions on grain contracts. Each of the large grain companies have instituted limits on taking new grain contracts from farmers. Which of the big players is taking new contracts more than 12 months out? So, as a farmer, how am I supposed to manage price risk, if my elevator will not contract grain? I am not discussing locking in 2010 or 2011 prices, but currently many elevators will not take contracts on any new crop corn, and many others will not take sales beyond May 2009. That is the crop I'm planting right now. As a side note, fertilizer dealers are asking farmers to lock in prices for this fall, yet I cannot contract the grain that fertilizer will produce in 2010. There is one tool still available, which I'll get to below.

NCGA is not blaming the elevator industry for this recent phenomenon. The elevators are a business like any other. They have to recoup losses and manage price risk. So, they spread basis to cover losses and build in additional risk principles; they initiate fees on Hedge to Arrive contracts (HTA) or book the basis contracts; or they just forego future risk by not offering forward contracts.

Given the grain companies' unwillingness to offer contracts beyond 12 months, the only price risk management options remaining for most growers are the futures and options markets. While these have always been valuable tools for growers, they have not been widely used. By one estimate, probably less than 10 percent of farmers are directly using the futures markets for risk management. Perhaps the recent developments in the cash market will drive more growers to use these tools. However, farmers will now have to carry the margin risks, or Options premiums, that were previously carried by the grain elevators.

I would like to commend the CME Group, the Minneapolis Grain Exchange, Kansas City Board of Trade, and the Commodity Markets Council for hosting a two-day meeting on market convergence in early April. This Task Force provided NCGA an opportunity to address convergence issues. During our scheduled time, NCGA presented the following points for consideration to address only convergence.

Simply to fix convergence in the market, we must fix delivery. For this problem, there are no easy solutions. Here are a few recommendations we put forward to the CME Group.

1) Provide a mechanism for farmers or small elevators that have taken a short position to actually deliver against that futures contract. Currently, farmers cannot make delivery against these positions. Farmers can only sell futures and deliver against shipping certificates, provided the owner of that certificate plans to make delivery and go to load out. If the delivery stations realized that a farmer or an elevator could call a clearinghouse and set up delivery, it would cause the commercials to drive the futures down at contract expiration to the cash price. I understand this is no easy feat, and could be disruptive to an orderly close out of contracts, but the possibility of a significant number of farmers making delivery would certainly cause the commercials to re-establish convergence, lest they suddenly find themselves in possession of overpriced grain. A possible hybrid would be to restrict farmer delivery to only a few points with a 1 or 2 day delivery option.

2) Implementing a Forced Load Out plan, whereby some set portion of contracts has to go to delivery would also restore convergence. However, it remains unclear on how these load outs would be distributed. Likewise, it would seem this would drive the non-commercials out of the market prior to contract expiration, severely impacting liquidity.

3) Increase the number of shipping stations. By our count, there are currently 28 shipping stations approved as "regular" for corn delivery through June 30, 2008. These stations can be further reduced to 9 firms. Of these 9 firms, I would contend that only 2

are truly sellers. In other words, they can write a shipping certificate, but since they cannot use the grain internally (processing or through their own export facilities) they must sell the grain, and therefore, may be more inclined to make delivery against a diverged market. I believe balancing or at least increasing the number of sellers that can write shipping certificates may help to re-establish convergence. There are a number of large ethanol plants operating or being built in proximity to the Illinois River. Some of these will have docks that can load out if necessary. A similar approach would be to look at adding shipping stations that are not located on the Illinois River, but are in the same homogenous market. Specifically, there are a number of unit train rail loaders which are all within 50 to 100 miles of the Illinois River which could deliver a train destined for New Orleans which is similar to a loaded barge on the river.

4) Lower Regularity. If the Working Capital rate was lowered from \$2 million to \$500,000, and the volume down reduced from 55,000 bushels, some larger country elevators with existing agreements with docks or maybe railroads connections might be encouraged to write shipping certificates. As mentioned above, additional players able to write shipping certificates would help in delivery.

5) Storage Rates. NCGA is not opposed to periodic adjustments in storage rates. These rates should be a closer reflection of actual storage costs.

6) Basis Contracts. Recently, NCGA received a brief from Dr. Eugene Kunda at the University of Illinois regarding a proposed basis contract. While it appears to be beneficial in managing basis risk, it really has limited impact on convergence. Although we have only given this proposal a cursory look, this new contract's real value would only be realized if the exchanges did not re-establish convergence.

Although directly impacted by the lack of convergence, we are troubled that this development may only be a symptom of a larger problem. Specifically, we are concerned that there may be a "commodity bubble" developing. If this is in fact the situation, several steps should be considered to temper unsupported futures market inflation. Among these are:

#### **Speculative Limits**

Although NCGA has not taken a formal position on the proposed increase in Speculative Limits, we believe the proposed increases would be ill-advised and would only increase the disparity between cash and futures markets.

#### **Daily Trading Limits**

NCGA formal policy states "NCGA will oppose an increase in daily trade limits on all commodity exchanges" (Policy IV-C, 14). It is our position that the proposed increase in daily limits will not aid price discovery as proposed. Instead, this change only increased market volatility. Current CBOT rules a 3 day bear run could only take the corn price down \$1.05, or roughly 17.5% of the current value (assuming \$6.00 corn).

### **Hedgers vs. Speculators**

NCGA recognizes the valuable role all parties play in providing liquidity in a market. Many of our growers have witnessed first hand non-liquid markets. I, personally, have been to a trading session of the Bolsa in Buenos Aires. While it attempts to have the same look and feel of the Board of Trade, this market lacks liquidity, and hence, really doesn't provide price discovery.

It is NCGA's opinion that the large funds are having an overwhelming influence on the futures markets and are "non-commercial" traders. Frequently, we see dramatic shifts in the futures market that have no substantiated fundamental drivers. While we do not want to drive the index and hedge funds from the market, they should be treated for what they are, "speculators". I realize this flies in the face of some CFTC decisions, but I believe to truly be classified as a hedger, an entity must have a cash commodity position. NCGA realizes that the large Index Funds are selling a commodity index and then going long in each of their market basket commodities which could be construed as a hedge. But, they are selling a market basket of futures prices, not a market basket of physical commodities.

NCGA proposes that the Index Funds no longer be afforded the same margin requirements as traditional commercial hedgers. Specifically, to be classified as a hedger the entity must have a cash position. We are not suggesting that they have an equal or proportional cash position, but somewhere within that company they must be buying or selling cash grain to retain the "hedger" classification.

We believe this will have a very limited impact on market liquidity. The large funds are still welcome to take their net long positions in each commodity market, but they will have higher margin requirements just the same as any other "speculators".

We have seen a run up in most commodity prices, most with the most dramatic rise beginning around September 2007. There is no doubt that this recent run up coincides with the downturn in the stock market. Commodities have always offered sensible investment during periods of inflation or economic uncertainty. We are concerned, though, that the volume of money and the market influence of non-traditional players may be developing a "Commodity Bubble".

If in fact a "Commodity Bubble" is developing and ultimately pops, the entire grain sector would be devastated. Similar to the increase in grain prices, other input costs have risen dramatically, particularly for seed, fertilizer, fuel, and land rents. Farmers are now carrying significantly higher financial risk to plant their crops. Where I would normally hedge my crops through an elevator that carries the risk, I find that I now have to carry the margin risks because elevators will no longer contract grain. A rapid deflation in grain prices would result in tremendous financial losses to farmers, especially given our recent inability for growers to contract grain at the current prices. If a disconnect exists between futures prices and cash (fundamentals) as I alluded to earlier, the impact of the bubble bursting would be all the more dire. For this reason, it is imperative that the CFTC review recent decisions concerning the market power some of the major players

wield and to consider the potential impact of pending decisions from the perspective of inflating a commodity bubble.

On behalf of NCGA, I would like to thank the CFTC for holding this important and timely forum on the impacts of the futures market on the grain trade.



**Comments  
Of  
American Cotton Shippers Association  
To  
Commodity Futures Trading Commission  
On  
Speculative Disruption In Cotton Futures Contract  
April 22, 2008**

The American Cotton Shippers Association (ACSA) submits these comments for the record in the Commodity Futures Trading Commission's (CFTC) Round Table Forum impelled by the disruption caused in the agricultural futures contracts by excessive speculative interests. In particular, our comments pertain to the speculative disruption in the Intercontinental Exchange's (ICE) No. 2 Cotton Contract.

**Interest of ACSA**

ACSA, founded in 1924, is composed of primary buyers, mill service agents, merchants, shippers, and exporters of raw cotton, who are members of four federated associations located in sixteen states throughout the cotton belt:

Atlantic Cotton Association (AL, FL, GA, NC, SC, & VA)  
Southern Cotton Association (AR, LA, MS, MO, & TN)  
Texas Cotton Association (OK & TX)  
Western Cotton Shippers Association (AZ, CA, & NM)

ACSA's member firms handle over 80% of the U.S. cotton sold in domestic and export markets. In addition, our members also handle a myriad of foreign growths of cotton, which is forward priced based on the New York futures market. Because of their involvement in the purchase, storage, sale, and shipment of cotton, ACSA members, along with their producer and mill customers, are significant users of the ICE's No. 2 Futures Contract. Therefore, they are vitally interested in a return to an orderly futures market reflecting market fundamentals that are not grossly distorted by speculative interests. Accordingly, we urge the CFTC to restore orderly price discovery to allow the cotton contract to once again be utilized by commercial participants who physically handle cotton for price discovery and to effectively hedge their purchases and sales.

**Congress Authorized Futures Trading in Agricultural Commodities for Price  
Discovery & Hedging**

In 1921, the U.S. Congress authorized contract market designations in the agricultural commodities for the purposes of trading in futures contracts primarily for the purposes of:

- Hedging against price risks;
- Discovery of prices through vigorous competition; and
- Actual pricing of commercial transactions.

**REPORT: EXCESSIVE SPECULATION  
IN THE WHEAT MARKET  
EXHIBIT #11**

-2-

The Congress acknowledged that while futures contracts offer an investment opportunity, this conduct should be subordinate in importance to the commercial uses for which the agricultural contract markets were created.

In establishing the agenda for the April 22<sup>nd</sup> Roundtable Discussion, the Commission requested comments on Price Discovery in the Agriculture Futures Markets, including an overview of the market fundamentals, the role of speculators, index funds and commercial hedgers, the adequacy of transparency in the markets, and the adequacy of contract terms and conditions. In the discussion that follows we establish that the market fundamentals bear little relationship to the speculative activity in the ICE Number 2 Cotton Contract. As a result, commercial hedgers have exited this market, due to the fact the traditional cash to futures relationship has ceased to exist.

This situation is the result of a recent phenomena, the advent of index funds with an estimated aggregate value of \$1 trillion and the participation of Over-the-Counter (OTC) traders, which take a myriad of forms. While bringing record liquidity to the agricultural contracts, these entities have turned such contracts into investment contracts, thereby defeating the purposes for which said agricultural contracts were created. The result has rendered the agricultural contracts, particularly the cotton contract, ineffective for hedging against price risks, the discovery of prices, and the actual pricing of commercial transactions. The physical markets in the agricultural commodities have been adversely impacted precluding cooperatives and merchants from offering price quotations to farmers or end users since they cannot use the contracts for hedging purposes.

**The New Speculative Activity Ignores Market Fundamentals  
Creating Severe Strain on the Cash Trade Resulting in the Lack of Price Discovery,  
the Loss of a Hedging Tool, & Higher Margin Costs**

Since January, the U.S. cotton industry and its supporting financial institutions have lacked confidence in the ICE Number 2 Cotton Contract as a vehicle to manage its price risks through hedging and to seek price discovery.

By early March, the open interest had reached record levels of just over 300,000 contracts or 30 million bales of cotton. About two thirds of this open interest was in the May and July contract periods, while the other third was in the December contract month. Since the U.S. produced only 19 million bales in 2007, the commercial trade (producers, cooperatives, merchants, and mills) represented a much smaller portion of this volume. The commercials that held the physical cotton had sold futures to lock in their basis and carry the cotton until sold and shipped.

This basis was determined when the producer, cooperative or merchant agreed to the physical sale. It is imperative that a traditional hedger be able to hedge by locking in his basis to reduce price risk, and that the market providing the hedge represent the

-3-

underlying cash market value. It is equally critical to the interest of his or her lender. Banks demand that a client's position be marked-to-market on a daily basis so that they can value the collateral held by the bank in the trader's account.

Speculative trading, at a time when not one additional bale was consumed or destroyed by weather, drove up cotton futures prices by over 50 percent in a two-week trading period in late February. On March 3<sup>rd</sup>, the price in the front month (March) reached \$1.09, when two weeks previous to that it was at 72 cents. At the same time, the physical price was in the low 60 cent range. On that day, in a short time frame, the commercial trade did not have sufficient time to adjust to this irrational event, which was unrelated to the physical or cash market – a market with half of last year's 19 million bale crop still unsold – the highest level of U.S. stocks since 1966 - a market with a 50 percent U.S. and world stocks-to-use ratio given record world yields and reduced consumption due to poor economic conditions.

The commercial trade was subject to an immediate, unwarranted, and severe financial strain – a strain never realized before in the history of the U.S. cotton industry. Credit lines and lender's perceptions of client risk were tested well beyond the norm. To meet margin calls, banks would have had to value a clients' physical stocks well beyond what the market could bear. The value of the cash commodity bore no relationship to the futures or option prices. No potential buyer of the physical commodity, either a textile mill or another merchant, would pay an amount in excess of its spot or cash market value. Therefore, to satisfy its lenders, the commercial trade had to close out futures at huge losses to generate the cash to repay its loans. Some smaller merchants, who could not withstand these losses, were forced to discontinue operations. Larger merchants with more substantial balance sheets were severely impacted as well and in some cases had to cease or greatly reduce the scope of their operations. At the end of the day, over \$1 billion would be posted in margin calls.

The current futures market situation precludes any form of price discovery because of the potentially high margin risks. Lacking the financial ability or willingness to hedge in the futures market, the result is that merchants and cooperatives cannot offer farmers forward prices. This situation also precludes individual farmers from using the futures market.

Lacking price discovery, the U.S. cotton farmer cannot adequately make production plans. The same goes for a U.S. textile mill who cannot determine what his raw fiber costs will be in future months. Further, this situation has severely impacted foreign producers, particularly in Australia and Brazil who use the ICE Contract to price forward contracts up to two years in advance of planting.

The entry of large speculative funds and index funds into the agricultural futures contracts has clearly distorted both the futures and the physical or cash markets in agricultural commodities. There is such an abundance of cash in the hands of these funds

-4-

that their impact on the agricultural markets is overwhelming and negates the primary purposes for the existence of such contract markets.

#### **Re-examine Hedge Exemption for Index Funds Not Involved In Agricultural Markets**

Lacking confidence in price discovery, the U.S. cotton industry and some of the world's leading producers are now at a virtual standstill.<sup>1</sup> The U.S. cotton trade has successfully utilized the cotton futures contract as the foundation for its business model for over 135 years. Overnight, we have been stripped of a vital tool in which to conduct our business. We are now exposed to greater risk, which allows only the few highly financed or leveraged companies to function.

Unregulated speculation has severely limited our role of making a market for our producer and mill customers. In the future, how can producers maximize their price at the

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<sup>1</sup> In normal times of abundant supply, futures will trade at full carry from the first to the second futures month. "Full carry" in this context is for the certificated stock – cotton eligible for delivery on the futures contract as distinguished from regular cotton inventory. The difference between the two is the weight and overage penalties that accrue on certificated stock as it remains under certification for extended time periods. For cotton under certification between four and twelve months, these penalties amount to 3.5 lbs of weight per bale per month. So if, for example, a trader were to take delivery of this cotton in May and tender the bales on July futures, he would invoice each bale in July at seven pounds less than he paid for it in May. This seven pounds amounts to just over \$5 per bale at current prices (7 lbs @ .73 equals 5.11). This needs to be added to the cost of carry on regular inventory. Regular carry amounts to about \$5.50 per bale per month in a Memphis warehouse (Memphis is where the bulk of the current cert stock is stored). To summarize, the cost of carrying cert stock for two months from May to July amounts to about \$16.10 per bale (\$5.11 penalty + two months carry @ \$5.50). This amounts to 322 points at 500 pounds per bale.

Between May 1 and July 1 there will be 600,000 bales of certificated stock with an age of four months or older. This is roughly 60 percent of the 1 million bales in the cert stock. This means the weighted cost of carrying the entire cert stock from May to July is 290 points (600,000 bales @ 322 and 400,000 bales @ 243). In theory, then, 290 points is the maximum spread that May should trade under July, since that is sufficient discount to ensure a risk-less transaction, buying May and selling July. "Risk-less," that is, except for the cash flow risk of owning over one million bales hedged with short July futures for two months! In the event the cotton market should repeat its recent performance and spike say thirty cents per pound, the owner of the cert stock would need to come up with an additional \$150 million to meet margin calls before he could liquidate his seemingly "risk-free" trade. Few if any members of the cotton trade are in position to take this cash flow risk. This is proven by the 360-point spread at which May/July was trading at last week.

The additional 70 points over the cost of carrying the position for two months reflects the trade's current unwillingness (or inability) to take this cash flow risk. In normal times, merchants would trip over each other to lock in such a margin, yet the market has traded at this level. In fact, far from rushing to lock in this margin, merchants continue to add additional bales to the cert stock, presumably to get the cotton off the balance sheet along with the accompanying short futures. This implies extraordinary levels of risk aversion, and a failure of the market to provide accurate price discovery.

-5-

farm gate or textile mills minimize their costs at the receiving dock lacking a futures market that provides accurate price discovery?

We simply cannot function in a market with unrestrained volatility unrelated to supply-demand conditions or weather events. The ICE Number 2 Contract is no longer a rational market for price discovery and hedging – its use to the commercial trade has been minimized. It is now an investment vehicle for huge speculative funds that have created havoc in the market unimpeded by fundamentals or regulation. It is a market overrun by cash precluding convergence of cash and futures prices, hedging, and forward contracting – a market lacking an economic purpose – a market not contemplated by the Congress when it authorized futures trading of agricultural commodities.

While speculative interests are vital to the functioning of a futures contract, a balance must be struck. In that regard, the CFTC is urged to take the necessary and immediate action to bring this about and restore the commercial trade's confidence in the futures market. **Therefore, we recommend that an index fund with a hedge exemption should restrict its position in a commodity to the dollar allocation or the percentage of funds allocated to that commodity as defined in its prospectus and recorded with the CFTC. Further, any variation should be subject to speculative position limits, and that such funds should report their cash positions on a weekly basis.**

We also submit that the role of the unregulated swaps market is contributing to this situation since there is no limit to or transparency in their trading activity. It is our recommendation **that the CFTC monitor and oversee all swaps and OTC activity by requiring the reporting of all swap and OTC contracts by market participants, and that it determine the aggregation of positions from all sources, including the exchanges, ETFs, swaps, OTC, and all other trading entities. Further, that all non-traditional hedge accounts, those not involved in the commercial enterprise of physically trading bales of cotton, be reported as a separate individual category.**

#### **Cotton Margin Requirements Are Arbitrary & Onerous**

The role of margin requirements should insure the efficient operation of a contract market by maintaining a balance of accounts between the longs and shorts and when necessary by requiring additional margin calls to effect orderly settlement in volatile markets. Most importantly, margin requirements should be fair, consistent, and facilitate the efficient functioning of a contract market. That is not the case with cotton margin requirements.

The margin requirement in the ICE Number 2 Cotton Contract is arbitrary, capricious, and unreasonable. The cotton contract does not margin futures to the close of the futures contract month, but establishes margins at the synthetic level determined by the close of the options contract in that month. While the futures month may be locked at the limit there are no limits on the option's contract, therefore, in that situation the option is likely to close at a level well above the futures close. This onerous requirement limits the ability of the commercial trade to obtain the requisite financing to use the contract market,

-6-

thereby precluding the use of the contract market for price discovery and hedging.

While the margins are established by the contract markets and do not require approval of the Commission, the Commission does have emergency authority under Section 12a(9) of the Commodity Exchange Act<sup>2</sup> “to direct the contract market whenever it has reason to believe that an emergency exists, to take such action as, in the Commission’s judgment, is necessary to maintain or restore orderly trading in ... any contract market.” The current situation is such an emergency pursuant to the statutory definition as it constitutes a “major market disturbance which prevents the market from accurately reflecting the forces of supply and demand for such commodity.”<sup>3</sup> In this case cotton. Such an emergency exists, and we urge the Commission to use its emergency authority to, *inter alia*, **require that the ICE and its clearing members adhere to the practice of margining futures to futures settlements and options to option settlements and that only those involved in the physical handling of the agricultural commodity (cotton) be eligible for hedge margin levels.**

We urge the Commission to promptly adopt our recommendations. These appropriate and minimal measures should help bring transparency to the cotton contract, limit excessive and disruptive speculation unrelated to market fundamentals, restore price discovery, and encourage the commercial trade to utilize the contract as a hedging mechanism thereby allowing producers and textile mills to once again have access to forward contracts as risk management tools.

In taking this necessary action we respectfully suggest that the Commission be firm in its resolve and that it ignore those who would justify this irrational imbalance in the U.S. agricultural contract markets on the grounds that the necessary oversight, reporting, and regulation of the index funds and swaps operators would drive this business offshore. That is a competition issue that should be resolved in the international marketplace. It is not the role of the Commission to guarantee the exchanges record trading volumes, but to assure that the agricultural contracts provide price discovery and hedging. The CFTC’s role is to protect those that Congress intended it to protect - the commercial users of the agricultural contract markets.

By taking action to restore the integrity of the agricultural contract markets the Commission will be fulfilling the legislative intent that its role as an independent regulatory agency is to prevent “excessive speculation ... to the detriment of the producer or the consumer and the persons handling commodities and the products and byproducts thereof in interstate commerce rendering regulation imperative for the protection of such commerce and the national public interest therein.”<sup>4</sup>

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<sup>2</sup> 7 USC 12a(9)

<sup>3</sup> *Id.*

<sup>4</sup> 7 USC 5

-7-

ACSA supported the establishment of the CFTC as an independent regulatory agency in 1974. It continues to support the Commission as such and urges it to fulfill its statutory duty and resolve the current crisis in the agricultural contract markets. The Commission's failure to assume that duty would call into question its role as an independent regulatory agency.



**Statement of the  
American Farm Bureau Federation**

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**TO THE  
COMMODITY FUTURES TRADING COMMISSION  
PUBLIC MEETING TO DISCUSS RECENT EVENTS AFFECTING  
THE AGRICULTURAL COMMODITY MARKETS**

**BOB STALLMAN, PRESIDENT**

**April 22, 2008**

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The American Farm Bureau Federation (AFBF) respectfully submits its views to the commission as it reviews the turbulent conditions in the futures market. As the nation's largest general farm organization and the representative of millions of farmers and ranchers in every state in the nation, AFBF has a vital interest in how commodity marketing issues affecting our members are perceived, examined and decided. We are seriously concerned about the effective performance of futures exchanges as mechanisms for price discovery and risk management.

Over the past months, we have witnessed extreme price volatility, expanding and volatile cash/futures basis relationships, and the difficulty of hedgers to meet margin calls. In addition, the role of speculative and commodity-index-related trading in agriculture futures markets, while growing for some time, has reached historic levels and added to the uncertainty in these markets.

The basic purpose of the Commodity Futures Trading Commission (CFTC) is to ensure that futures and options offered by the designated contract markets under its jurisdiction manage price risk and discover cash prices.

However, the futures market mechanism is, at least, bent at this point in time, and the fact that several major grain and oilseed marketers are only offering firm crop price bids 60 days into the future is a rather ominous sign the breaking point might not be far away.

#### **Lack of Convergence Between the Futures and Cash Prices**

Convergence is the idea that futures prices by the close of the contract eventually equate to what is occurring in the cash market. It varies by commodity and geography, but historically the relationship between the cash and futures markets has been fairly constant with predictable seasonal variation. Certainly local market conditions might move the basis level around a few cents on any given day, but the underlying basis figures – predicated on the futures and cash markets coming together at the end of the contract – allowed all involved to function in a well-informed manner.

Today neither the convergence of futures to cash nor reasonable expectations of basis levels applies for a number of contracts. This is significantly increasing the risk faced by producers and will likely induce major structural change in the grain/oilseed/fiber handling sector over the next few months.

These developments challenge producers' abilities to develop and implement risk management programs for marketing their products. The problem is compounded by the fact that many producers are being asked to make firm price commitments for inputs. In some instances, they are even being asked to pre-pay for inputs they will not utilize until next crop year. This results in the uncomfortable position of producers locking in future input costs without similar opportunities in future crop prices.

Possible technical solutions to these issues could be implemented by the exchanges either voluntarily or via order of the CFTC. For example, one reason futures prices may not be making an orderly convergence to cash prices is part of the process established in 2000 when the river system delivery process was instituted by the Chicago Board of Trade. This system introduced

the concept of a certificate of delivery that does not have to be redeemed by any certain date. Consequently, there is little incentive for the taker to move the grain into the physical market and force convergence. There also has been much discussion regarding the exchanges' increasing the cost of carrying these certificates by boosting the cost of grain storage.

Some possible solutions to the convergence problem may be:

1. We encourage the CFTC to require additional delivery points to prevent market manipulation and assure an adequate delivery system. We note the Kansas City Board of Trade is currently in the process of increasing its wheat contract delivery points from two to four. We would encourage other exchanges to consider similar changes.
2. End the certificate of delivery and return to the notice process originally used for delivery against the futures contract. This should not cause any major disruption to futures trading. Once the change is made and traders realize delivery means actual physical acceptance of the commodity or that there will be some monetary penalty for re-tender, then we should see the orderly liquidation of open interest going into a contract delivery period and moving toward contract expiration and a more orderly convergence.
3. An option which merits examination is cash settlement. There are cash-settled grain and oilseed contracts today; however, the volume for those contracts is probably too small to test this in practice. Moving to cash settlement should not be undertaken lightly, but it should be studied as a way to improve convergence.

#### **Impact of Higher Margin Requirements and Expansion of Daily Trading Limits**

Volatility is at a record high in the agricultural markets. With already high trading limits and high margin requirements, the average farmer has a difficult time using futures and options for price protection. Even larger commercial hedgers are having problems with financial liquidity.

Daily trading limits are of great interest to our members. While the rationale behind the increased limits is to let the markets clear and resume trading, in practicality, margin calls have become prohibitive. In fact, many hedgers simply do not have sufficient lines of credit to cover these high margin calls.

We request the CFTC analyze the possible effects on market participants of lowering the daily trading limits. We are not necessarily seeking to lower price limits, but we believe a study of the potential effects on margin requirements, risk, volatility, and financing charges could be instructive for the exchanges and market participants, as well as the commission. A thorough economic review should examine adjustments that could reduce volatility while still allowing the markets to clear.

#### **Role of Speculators and Commodity Index Traders**

As hedgers, our members understand that speculative interest is an important component of any commodity market by facilitating its primary function of price discovery and providing market

liquidity. Though speculators – including small investors – have always been integral to market function, they are now playing an exponentially greater role than ever before. Market analysts report a continued, massive inflow of capital into the grain pits, much of it by long-only, passively managed index funds that buy futures and roll them forward according to a set schedule.

According to Chicago-based agricultural research firm AgResource Co., total index-fund investment in corn, soybeans, wheat, cattle and hogs has increased to \$42 billion, up from just over \$10 billion in 2006 – more than quadrupling in less than two years. That number doesn't even include the flood of index funds that have moved into other agricultural markets, primarily cotton, during the same period. Barron's estimated in its March 31, 2008, cover story that "index funds right now account for 40% of all bullish bets on commodities."

The recent level of long positions translates to the funds actually "owning" significant amounts of the entire U.S. corn, soybean and wheat crops. Independent analyst Steve Brieser calculated at the end of March that index funds had effectively bought 36.6 percent and 62.3 percent of the 2007 domestic soybean and wheat crops, respectively.

Trading activity by funds is certainly one of the contributing factors generating high futures prices for commodities. Ordinarily, this would appear to be positive for agriculture. But if the futures markets do not converge with cash markets, there is little information on what real price levels should be either for producers or consumers of the commodity in question. With convergence, even if futures market prices fall precipitously in the delivery month, there are still economic signals being sent that producers can respond to. Without convergence, these trades become just so much froth.

In mid-March, index funds represented approximately 42 percent of the open interest in Chicago wheat, meaning that roughly two out of every five outstanding contracts were held by funds with limited need to trade on supply and demand fundamentals – they simply buy and hold. The result was a disconnect of the cash price (traditionally based on futures as a means of price discovery) from the high of the futures market. Forward contracting virtually ceased.

Historically, AFBF has supported open market participation and encouraged interest from speculators as well as hedgers, and we continue to support market involvement. However, our policy also supports CFTC oversight to ensure that market integrity is maintained and to curb practices that result in artificial price swings. In essence, it is up to the CFTC to ensure that participants do not prevent the futures markets from serving their roles as price discovery tools.

AFBF policy opposes restricting speculative funds from the commodity markets because they do provide pricing opportunities and liquidity that might not otherwise be available. We do not want to end speculative participation, nor do we believe the CFTC has that authority. Even if CFTC could restrict index fund investment activity, such an action could result in less liquidity and lower prices in the markets.

However, we do have some concern that from time to time fundamental price movements may be overwhelmed by extreme levels of financial speculation. It is critical for hedgers trying to

manage price risk of the physical commodity to fully understand who is in the market and, perhaps more importantly, why. Therefore, additional transparency about the funds involved in the futures market should be required so that the markets can fulfill their primary functions of price discovery and risk management.

The CFTC is charged by Congress with ensuring the commodity markets do not become solely a speculative trading arena, rather than a price discovery/marketing tool for the agriculture industry. To that end, it must restore marketplace integrity with appropriate transparency.

#### **Conclusion**

We reiterate that we continue to support the CFTC's regulation of the commodity futures business. While there has been discussion of merging the CFTC and the Securities Exchange Commission in response to the volatile trading environment, we vigorously oppose efforts to weaken the CFTC by transferring or reducing its authorities, or by combining it with the SEC.

Finally, we thank CFTC officials for arranging this public meeting to better understand recent market happenings, and for allowing us to share producers' views of current issues. We hope this discussion will inform the commission's future actions where it has regulatory authority to correct market situations. If additional authorities from Congress are needed in order to ensure future market functionality, we stand ready to work with the CFTC and legislators.



August 21, 2006

Ms. Eileen A. Donovan  
Office of the Secretariat  
Commodity Futures Trading Commission  
Three Lafayette Centre  
1155 21st Street, N.W.  
Washington, D.C. 20581

**RE: Comprehensive Review of the Commitments of Traders Reporting  
Program (71 F.R. 119 (June 21, 2006))**

Dear Ms. Donovan:

Bunge North America, Inc. is pleased to provide brief comments to the Commission's request for comment regarding its Commitments of Traders (COT) reports.

Bunge North America, the North American operating arm of Bunge Limited, is a vertically integrated food and feed ingredient company supplying raw and processed agricultural commodities and specialized food ingredients to a wide range of customers in the livestock, poultry food processor, foodservice and bakery industries. Bunge operated grain elevators, oilseed processing facilities edible oil refineries and packaging plants, and corn dry mills in the United States, Canada, and Mexico.

As a commercial market participant with a significant stake in well functioning futures and option markets, Bunge shares the concerns raised and responses made in the comments submitted to the Commission by the National Grain and Feed Association (NGFA) and the National Grain Trade Council (NGTC). Thus, rather than respond to the specific questions asked by the Commission and answered comprehensively in the NGFA and NGTC submissions we simply will amplify on several of the issues raised in those comments.

As many others have noted, there is no question that the COT reports have value in agricultural markets. Farmers, merchants, processors, food manufacturers, as well as agricultural lenders each look to the reports for insight into market supply and demand trends. As such, COT reports serve an important role as an objective third-party source of aggregated market information. The weekly "look-back" provided in the Commission's report has served the sector well.

Despite this record of success for the industry and Commission, we are concerned that the historical value of the COT reports may soon lose relevance. The current definition

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**REPORT: EXCESSIVE SPECULATION  
IN THE WHEAT MARKET  
EXHIBIT #13**



of commercial participant used by the CFTC to report data has more recently included the new "non-traditional" financial hedge community. While welcome as a class of investors, the Commission's decision to lump their positions into the commercial side of the report ledger has, in fact, masked true market supply and demand signals in some cases. Agricultural cash and futures markets are incredibly dynamic and are dependent on information that enables the sector to respond quickly. However, the sector is also dependent on growing cycles; once production decisions are made, they are made for an entire crop year. Separating out the financial hedge investors from traditional hedgers would help to better inform all market participants about underlying cash market conditions and influences.

Finally, the Commission through its questions appears to have serious reservations about separating out financial hedge positions for concern about revealing sensitive information. The CFTC for years has identified the aggregate commercial positions of Bunge and others without incident. While the Commission's abundance of caution is commendable, we believe it is misplaced. The purpose of the COT report should be to provide aggregate information about market activity in a manner that bolsters confidence and reinforces the commercial utility of the futures and option markets. Traditional hedgers of physical commodities use the futures and option markets to manage cash market price risks. The COT reports must convey information in a manner that retains the direct connection between cash and futures markets. We believe the current reporting definitions, which include participants with no cash market risk, ultimately could disconnect cash from futures and risk the very utility of the underlying futures and option contracts traded on US futures exchanges.

For these reasons we strongly urge the Commission to take prompt action to separately report the positions held by the new class of non-traditional commercial participants.

Thank you for providing this opportunity to comment.

Sincerely,

Thomas J. Erickson  
Vice President Government & Industry Affairs

## Market Observations: CBOT Wheat

Using Bunge estimates we draw the following conclusions about commodity index fund positions in CBOT wheat:

## 1.) Index fund positions equal 180,000 contracts WZ

- GSCI \$80 billion in total assets, 2.51% of which is CBOT wheat = \$2.01 billion notional, or 89,000 contracts (at \$4.50/bu)
- DJ Aig \$18 billion in total assets, 4.87% of which is CBOTwheat = \$877 million notional, or 39,000 contracts (at 4.50/bu)
- Deutsche Bank \$8 billion in total assets, 11.25% of which is CBOTwheat = \$900 mil notional, or 40,000 contracts at \$4.50/bu
- Miscellaneous smaller indices, like Rogers, CRB, SPCI, UBS, etc = at least another 15,000 contracts and probably more.

## 2.) SRW open interest

• Index Fund position in Dec	180,000
• Dec open interest	250,000
• Total open interest	470,000

## 3.) SRW 2006 crop size equals 78,000 contracts

• Index Fund position as % of crop	230%
• December open interest as % of crop	320%
• Total open interest as % of crop	602%

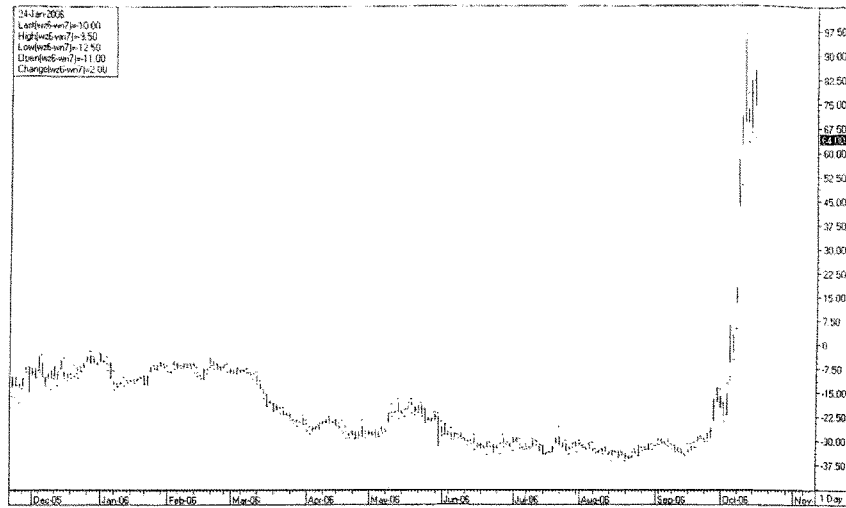
While the relative size these fund positions have to open interest and crop size warrant consideration, the serious issue presented is that this money must follow the rules of the underlying index and is hence not liquid capital until the roll dates are reached and even then the position may not move to what is considered by market fundamentals to be supported by underlying economics. Simply stated, we conclude that the positions are liquidity takers, not liquidity makers.

From the above one can see that the % of index participation is a problem for wheat and that is why the liquidity crunch has occurred. Traditional commercial hedgers who hedged US SRW, wheats of other class, and non-us wheat in the December futures contract at the CBOT were unable to exit positions when fundamental cash market conditions warranted.

The index fund participant is not a hedger in the historic sense and does not respond to market economics. Instead, they follow their index rules and buy and sell depending on net inflow and outflows to their underlying index.

The move in CBOT dec wheat vs n wheat has everything to do with the index position and very little to do with market economics. The underlying cash is weak and the balance sheet is loose. The index position is too large in

December wheat. The chart below demonstrates the effect of this "sticky" money.





## Chicago Board of Trade Wheat Contract Concerns

## Issue

The growth in commodity funds and the corresponding growth in financial hedge positions has created in some physical commodity futures markets an investment class that is large and non-responsive to economic conditions in the underlying cash market. This phenomenon perhaps is most readily apparent in trading in the nearby December futures for soft red wheat at the Chicago Board of Trade, where traditional basis relationships have eroded and the price discovery and risk management utility of the wheat futures contract is in question.

## Request

The Commodity Futures Trading Commission use the full extent of its authority to maintain agricultural futures markets that reflect cash markets and provide real, not illusory liquidity.

## Background

The phenomenal growth in the open interest in agricultural commodities in recent years reflects the investor interest in commodities. With the advent and maturation of commodity index funds, retail exposure to agricultural commodity price movements has become simpler and arguably less volatile because the funds are comprised of a basket of physical commodities that go beyond agriculture. The index fund investment has created price risk exposure to agricultural commodities for a class of market participants that is not so much driven by cash market fundamentals as they are by the rules of their own index.

As index funds have grown they have become a much larger force in futures markets. For example, open interest in the CBOT's wheat futures contract has soared from a historical average of 2 times the production of wheat to approximately 10 times the production of wheat at times this past year. The consequences of this growth – positive and negative – are increasingly visible in the agricultural complex.

The most noteworthy market from a negative consequences perspective is in the CBOT soft red wheat futures market. It is increasingly the view among traditional commercial market participants that the index fund positions are not necessarily market liquidity providers, but are rather takers of liquidity, as they generally do not trade on cash market fundamentals.

Commission Rule 1.3(z) defines hedging as follows: "Bona fide hedging transactions and positions shall mean transactions or portions in a contract for future delivery . . . where such transaction or positions normally represent a substitute for transactions to be made or positions to be taken at a later time in a physical marketing channel. . . . Notwithstanding the foregoing, no transaction or positions shall be classified as bona fide hedging for purposes of section 4a of the Act unless their purpose is to offset price risks . . . And such positions are *established and liquidated in an orderly manner* in accordance with sound commercial practices . . . ."

Market data and economic inference suggest that the index fund positions in wheat that are passive investments are causing market congestion and are not being liquidated in an orderly manner. The Commission's provisions reinforce this by stating in effect that a hedge is only a hedge if it can be put on and liquidated without causing market congestion or other pricing anomalies.

## Market Observations: CBOT Corn

If we look at Corn we have the following estimates:

## 1.) Corn open interest

- Index Fund position in Dec 250,000
- Dec open interest 570,000
- Total open interest 1,300,000

## 2.) 2006 Corn crop size equals 2,220,00

- Index Fund position as % of crop 11%
- Dec o/i as % of crop 26%
- Total o/i as % of crop 59%

## Commercial Proposal to Relieve Liquidity Congestion Concerns

### Issue

The growth in commodity funds and the corresponding growth in financial hedge positions has created in some physical commodity futures markets an investment class that is large and non-responsive to economic conditions in the underlying cash market. This phenomenon perhaps is most readily apparent in trading in the nearby December futures for soft red wheat at the Chicago Board of Trade, where traditional basis relationships have eroded and the price discovery and risk management utility of the wheat futures contract is in question. Specifically, the non-responsive index fund investments created a loss of liquidity in the market when the market most needed and expected trading responsive to underlying cash market activity.

### Proposal

The futures exchange community and traditional commercial hedging community together approach the index fund community urging them to voluntarily spread their positions in agricultural commodity markets across the front three to six months of open interest, rather than concentrating the investment into the front month only.

### Rationale

Agricultural markets are generally not as deep and liquid as their financial market counterparts and thus more susceptible to disruption due to significant open interest that does not trade in a manner reflective of cash market dynamics. Index fund positions, spread out over several months of open interest could bring improved balance in front month participation and greater predictability in market responsiveness.

### Background

The phenomenal growth in the open interest in agricultural commodities in recent years reflects the investor interest in commodities. With the advent and maturation of commodity index funds, retail exposure to agricultural commodity price movements has become simpler and arguably less volatile because the funds are comprised of a basket of physical commodities that go beyond agriculture. The index fund investment has created price risk exposure to agricultural commodities for a class of market participants that is not so much driven by cash market fundamentals as they are by the rules of their own index.

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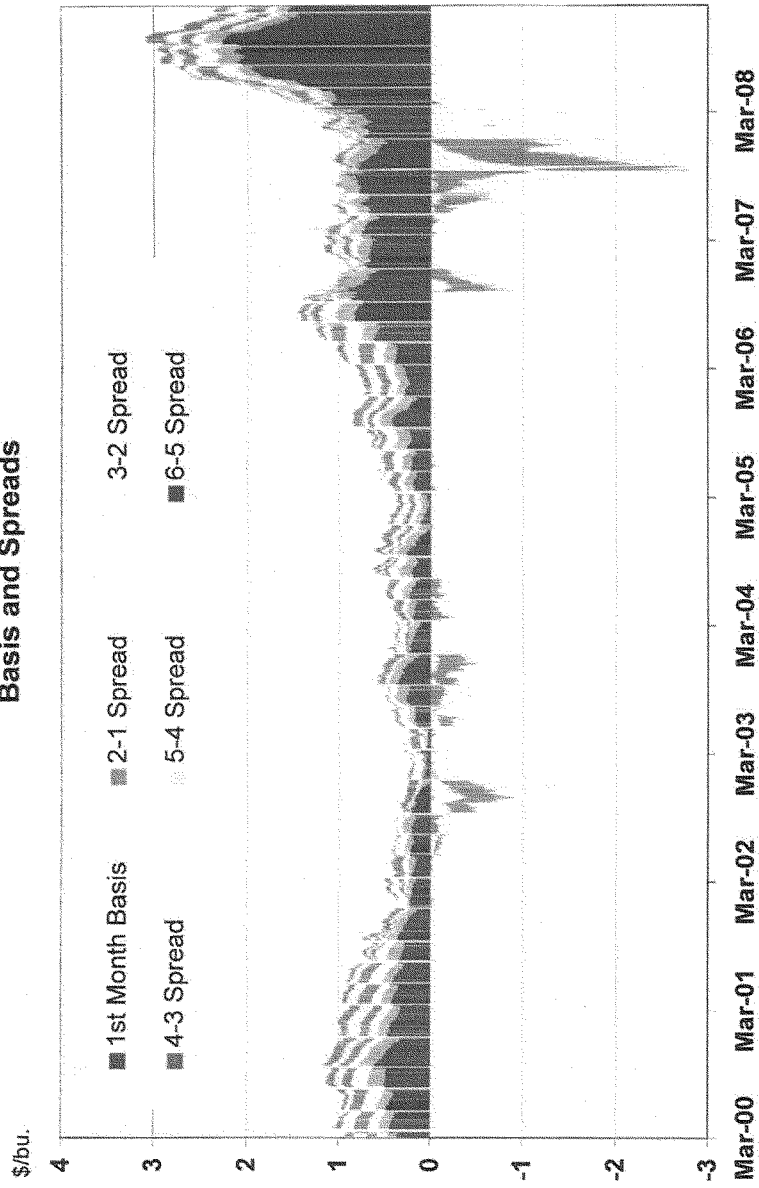
The most noteworthy market from a negative consequences perspective is in the CBOT soft red wheat futures market. It is increasingly the view among traditional commercial market participants that the index fund positions are not necessarily market liquidity providers, but are rather takers of liquidity, as they generally do not trade on cash market fundamentals.

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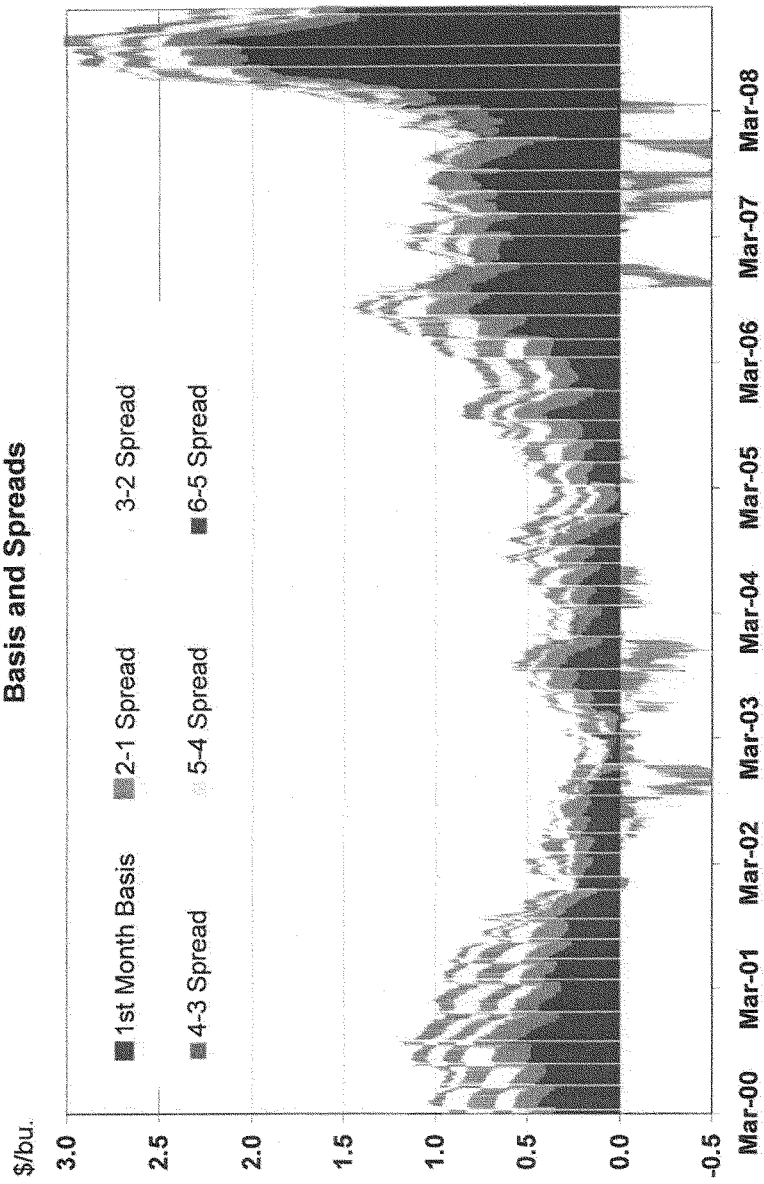
made or positions to be taken at a later time in a physical marketing channel,. . . .  
Notwithstanding the foregoing, no transaction or positions shall be classified as bona fide hedging for purposes of section 4a of the Act unless their purpose is to offset price risks . . . . And such positions are *established and liquidated in an orderly manner* in accordance with sound commercial practices . . . ."

Market data and economic inference suggest that the index fund positions in wheat that are passive investments are causing market congestion and are not being liquidated in an orderly manner. The Commission's provisions reinforce this by stating in effect that a hedge is only a hedge if it can be put on and liquidated without causing market congestion or other pricing anomalies.

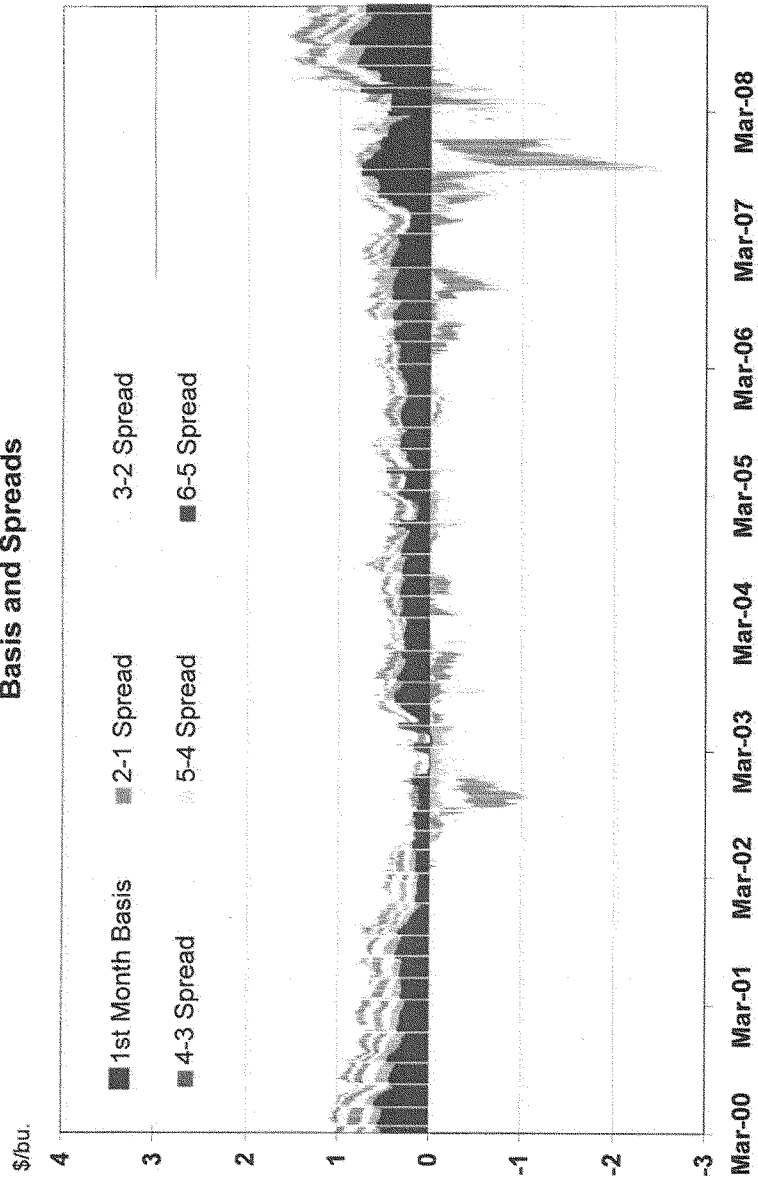
Chicago Wheat Contracts  
Basis and Spreads



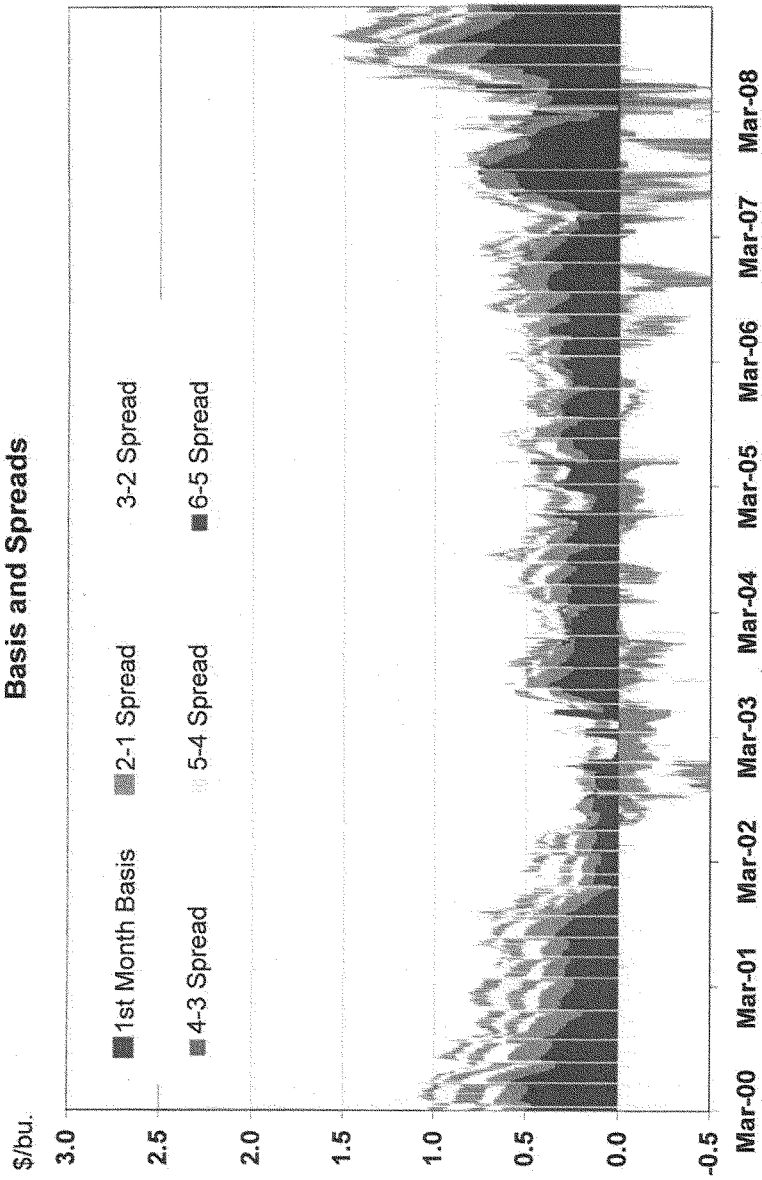
Chicago Wheat Contracts  
Basis and Spreads



# Kansas City Wheat Contracts Basis and Spreads

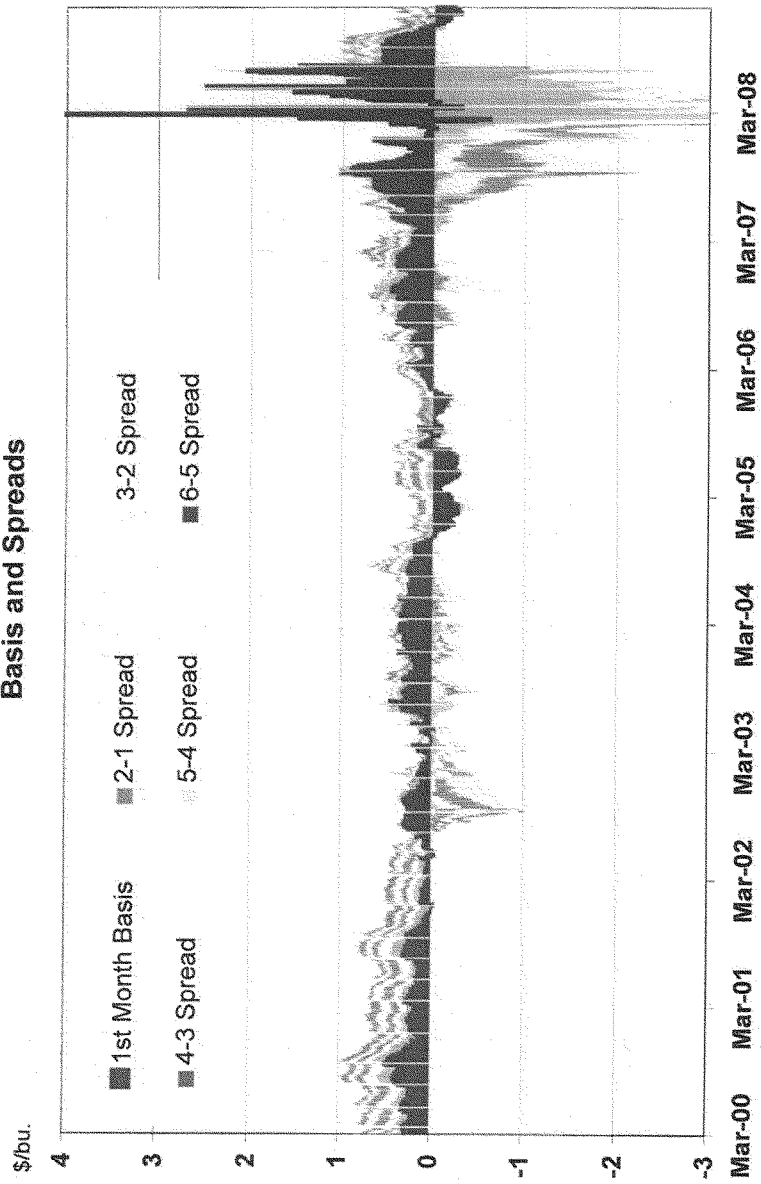


# Kansas City Wheat Contracts Basis and Spreads

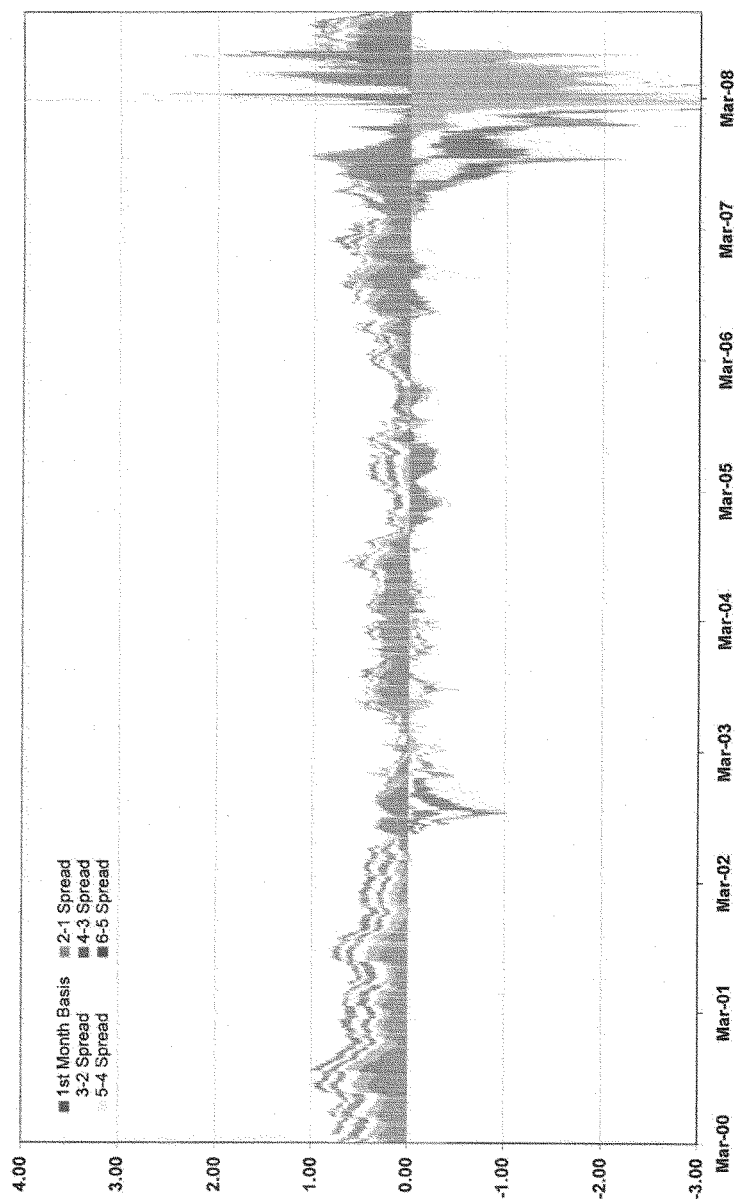




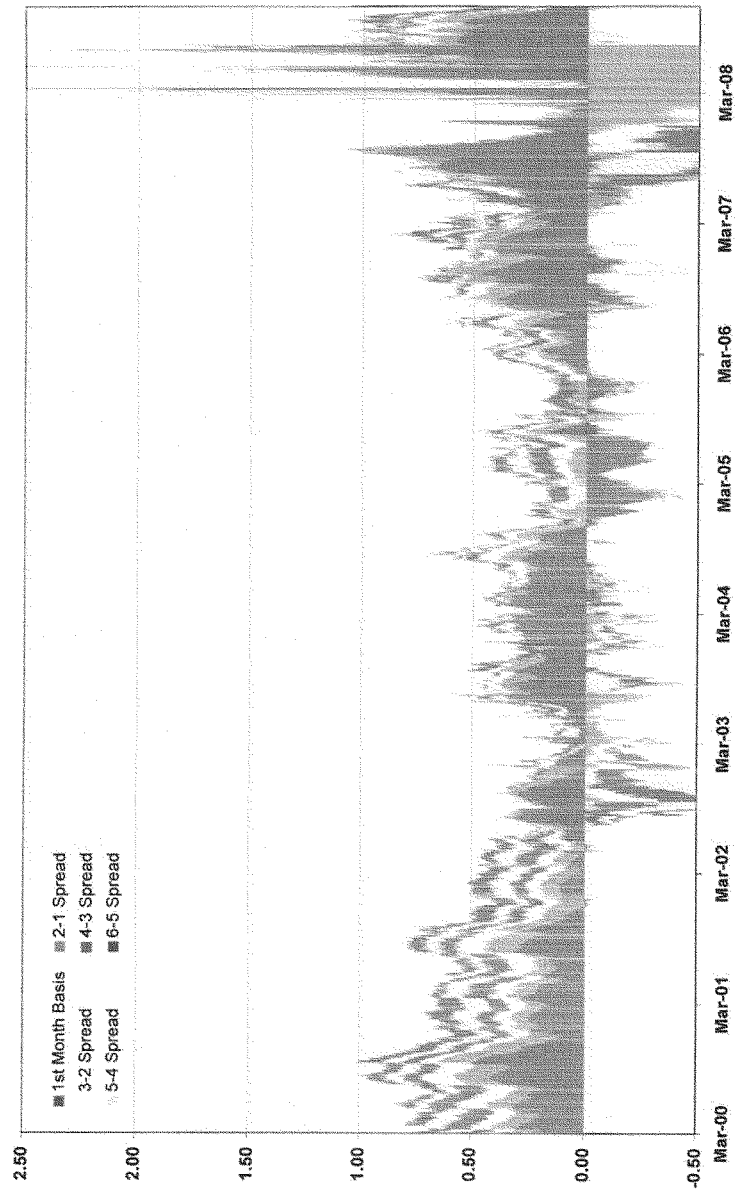
# Minneapolis Wheat Contracts Basis and Spreads



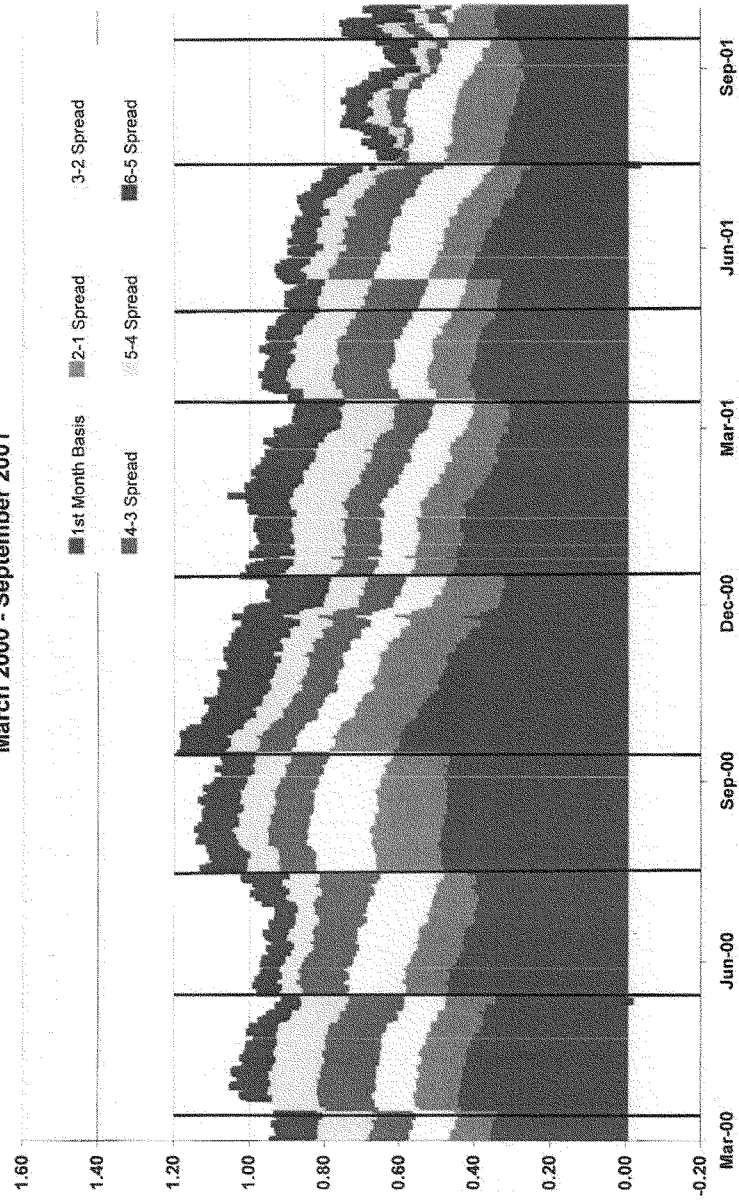
Minneapolis Wheat Contracts  
Basis and Spreads

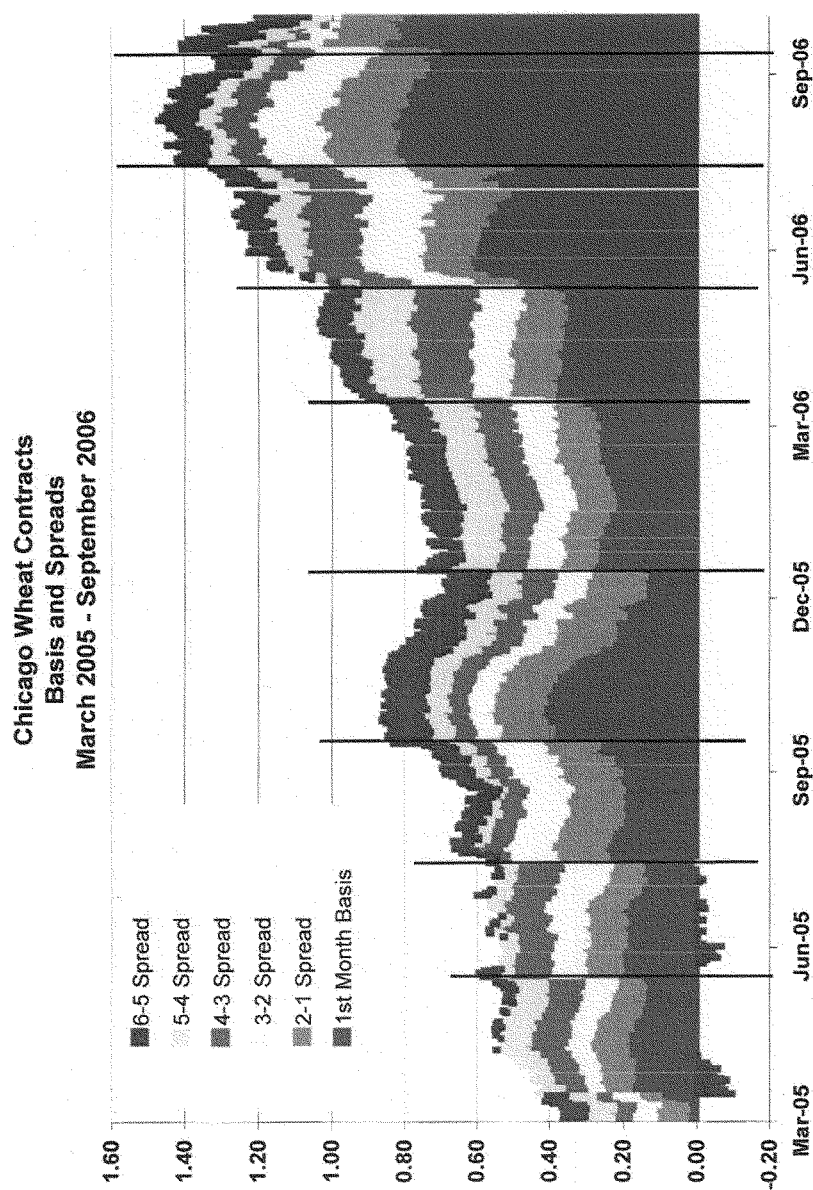


Minneapolis Wheat Contracts  
Basis and Positive Spreads

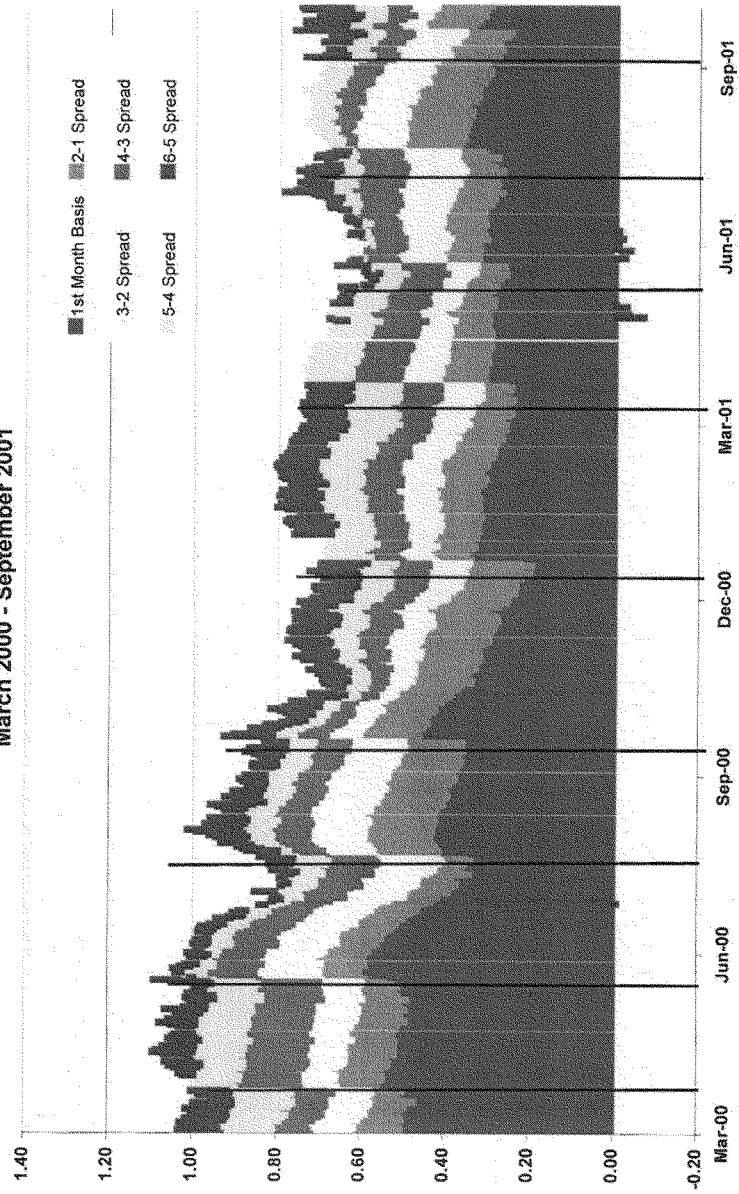


Chicago Wheat Contracts  
Basis and Spreads  
March 2000 - September 2001

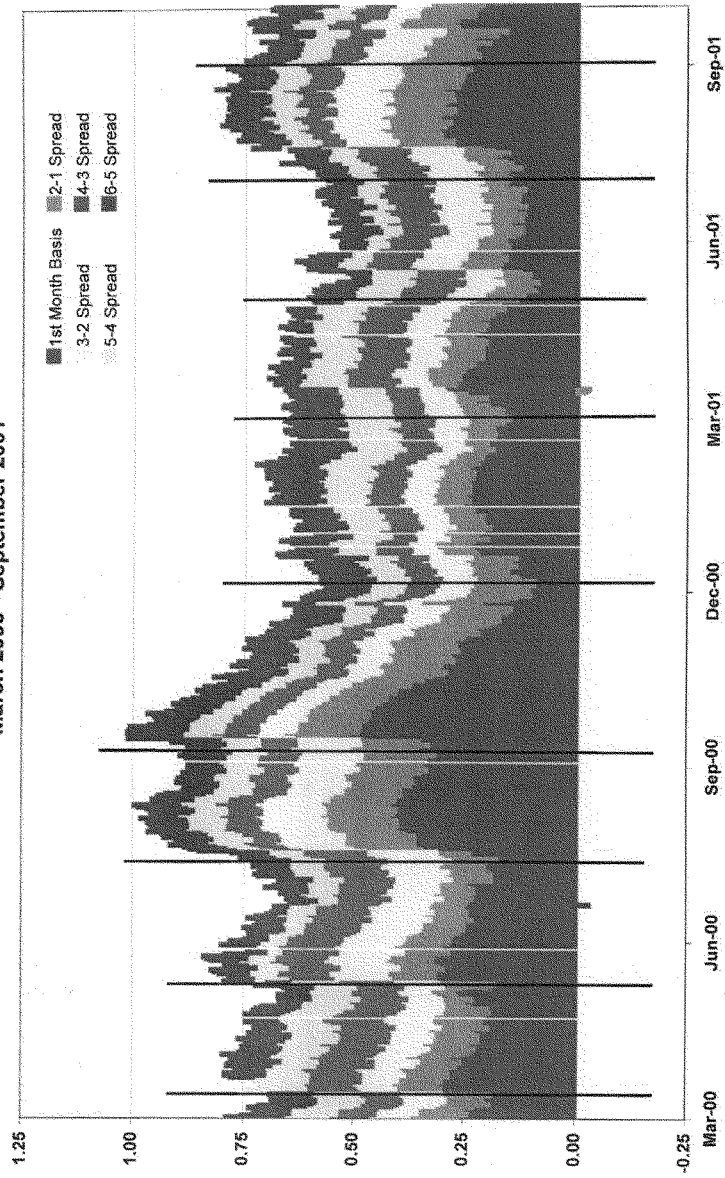




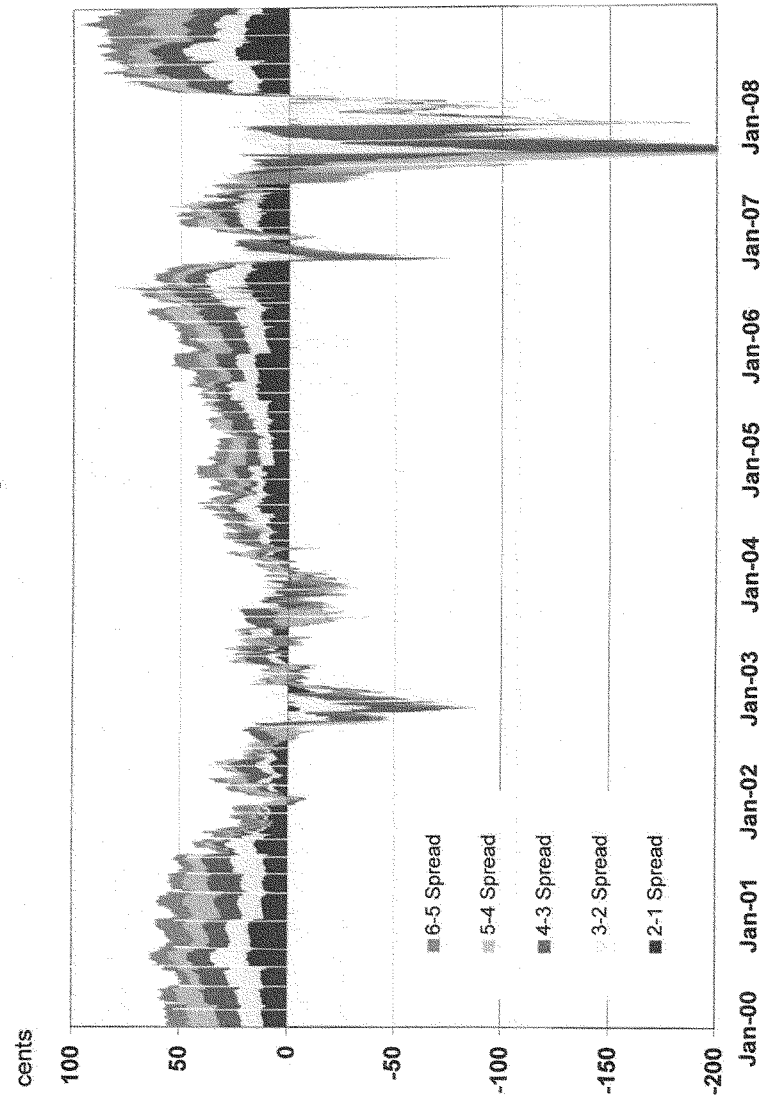
Kansas City Wheat Contracts  
Basis and Spreads  
March 2000 - September 2001



Minneapolis Wheat Contracts  
Basis and Spreads  
March 2000 - September 2001

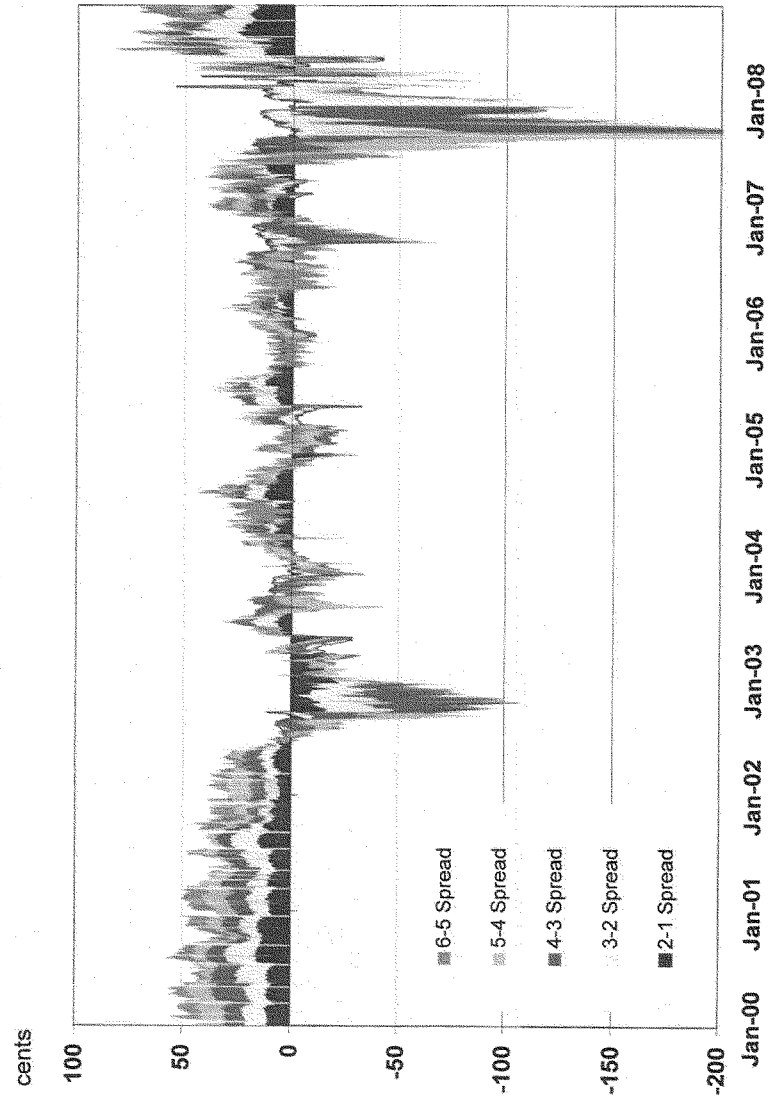


Chicago Wheat Futures Contracts  
Intermonth Spreads

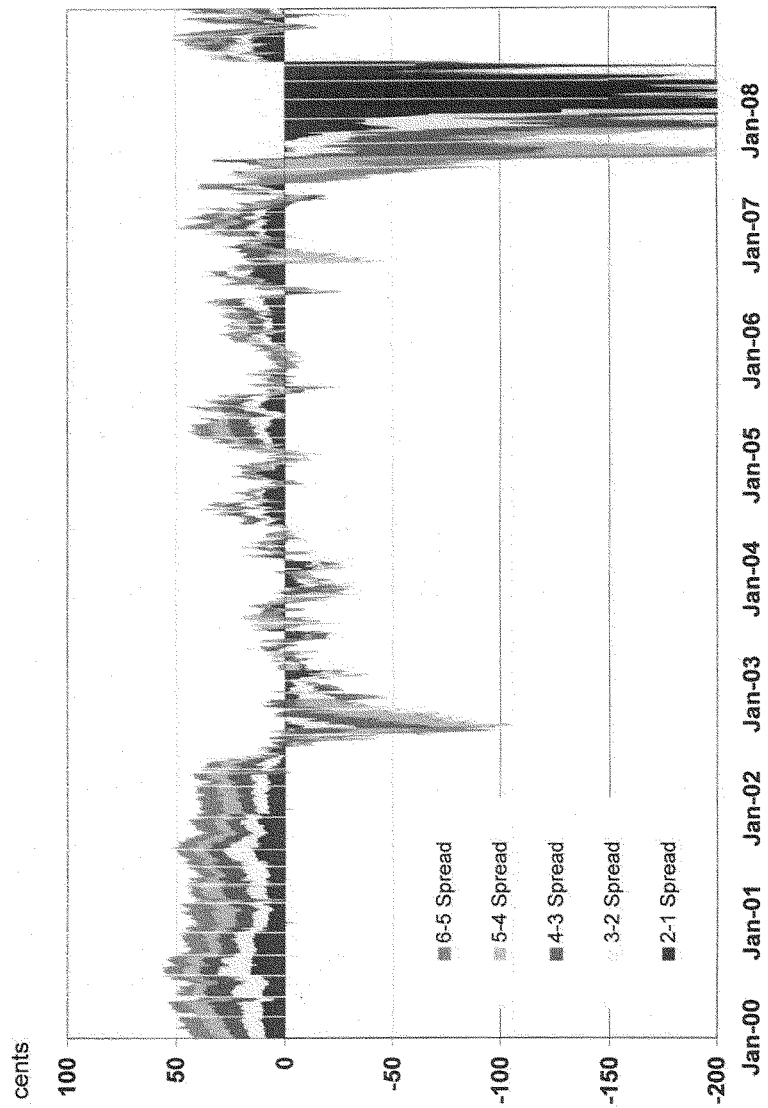




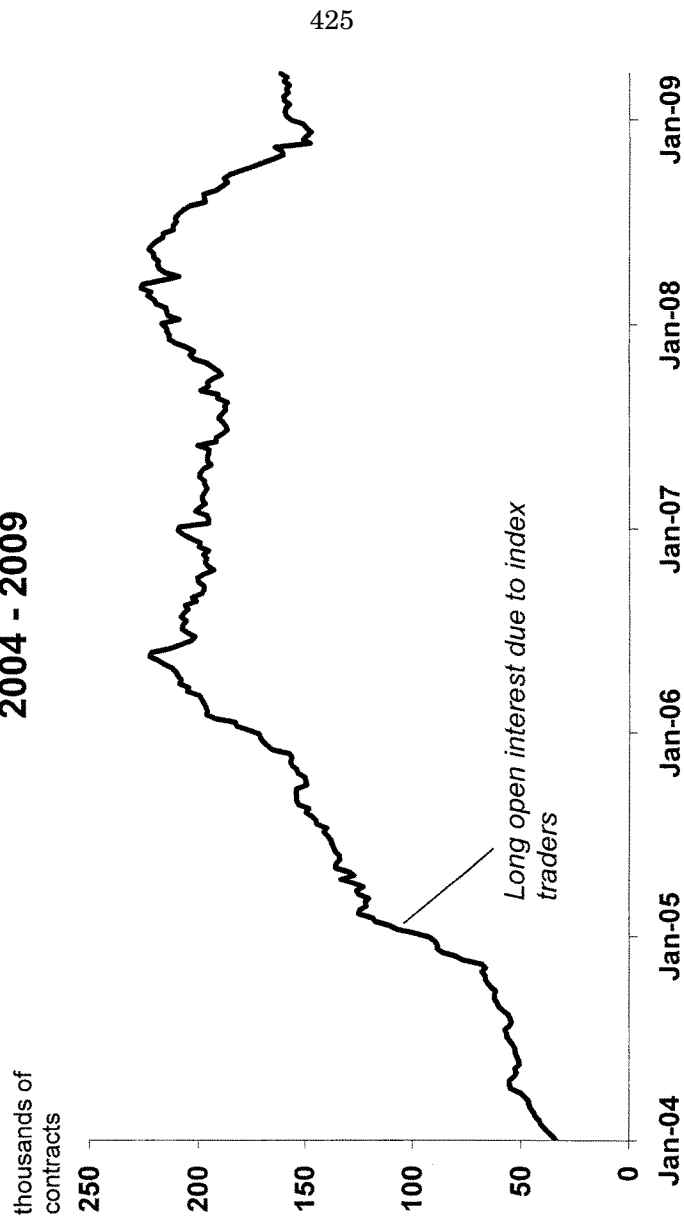
# Kansas City Wheat Futures Contracts Intermonth Spreads



Minneapolis Wheat Futures Contracts  
Intermonth Spreads



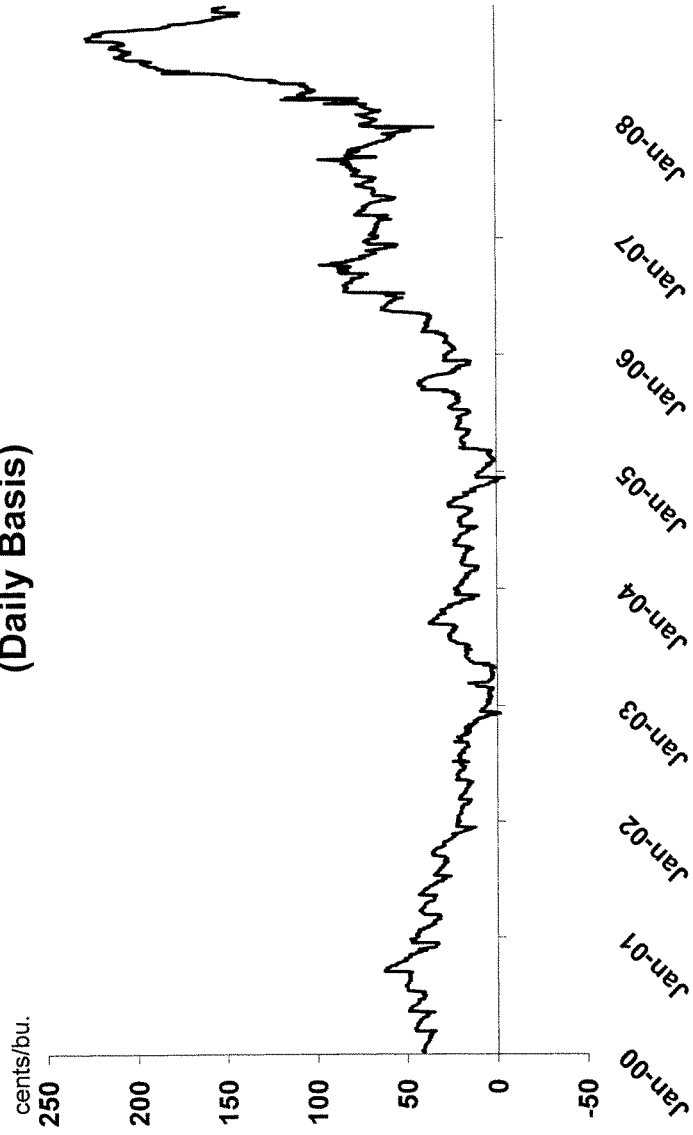
# Outstanding Chicago Wheat Futures Contracts Purchased by Commodity Index Traders 2004 - 2009



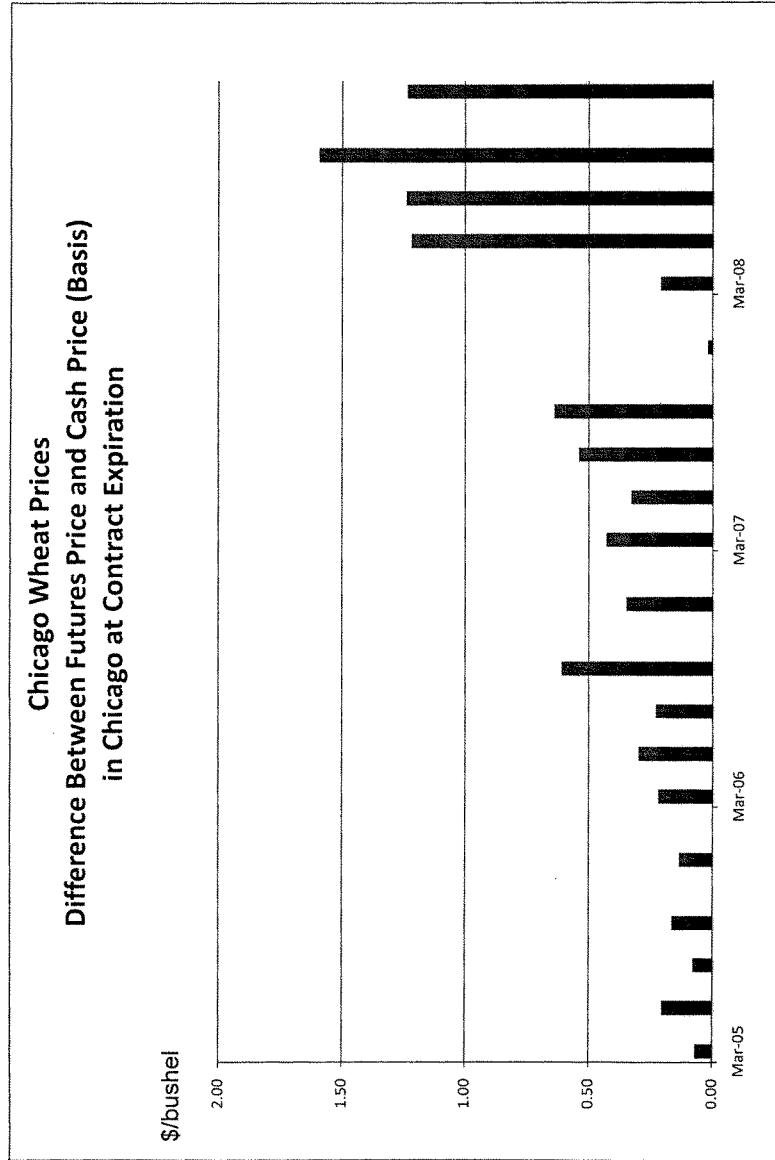
Permanent Subcommittee on Investigation  
EXHIBIT #1

Data Source: CFTC  
Prepared by Permanent Subcommittee on Investigations, June 2009

# Chicago Wheat Prices Daily Difference Between Futures and Cash Price (Daily Basis)

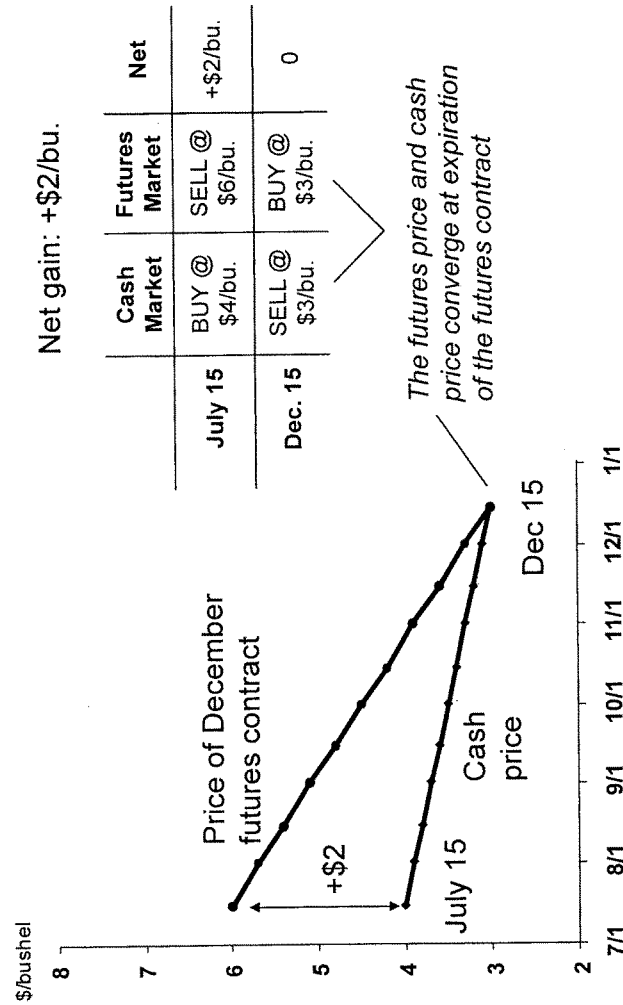


Data Sources: CME (daily futures prices); MGEX (average daily cash prices)  
Prepared by Permanent Subcommittee on Investigations, June 2009



Data Sources: CME (daily futures prices) and USDA (cash prices at Chicago)  
Prepared by Permanent Subcommittee on Investigations, June 2009

## Example of a Hedge With Convergence

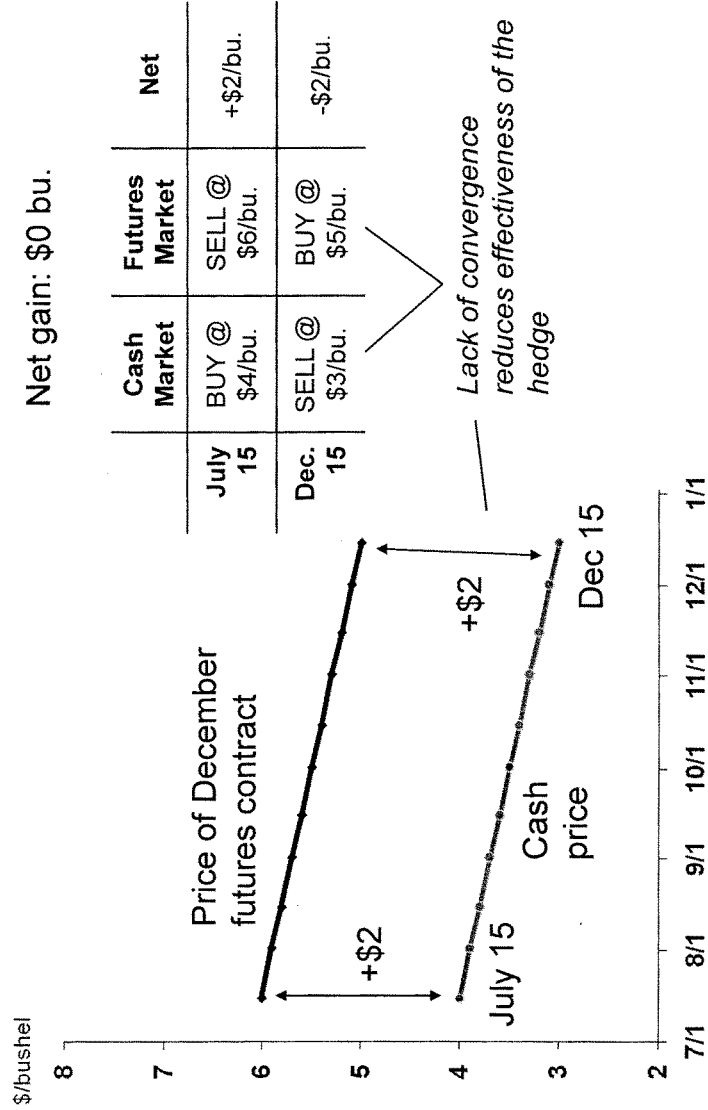


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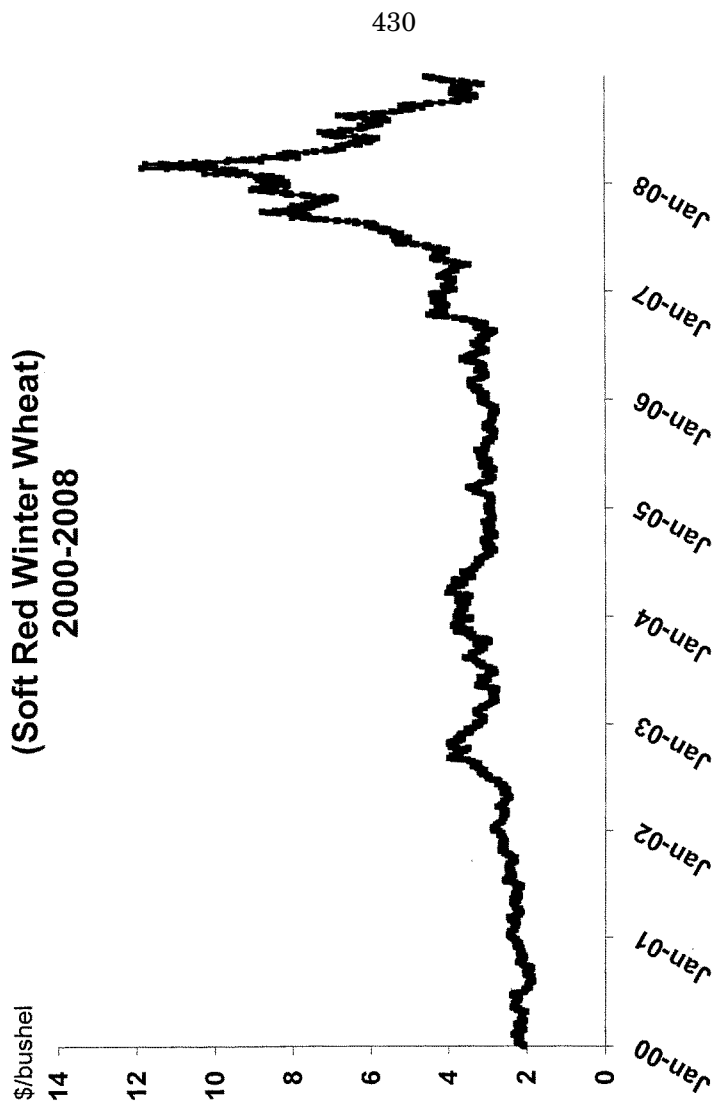
Permanent Subcommittee on Investigation

EXHIBIT #4

## Example of a Hedge Without Convergence



# Cash Price of Wheat (Soft Red Winter Wheat) 2000-2008



430

Permanent Subcommittee on Investigation

EXHIBIT #6

Data Source: MGEX (daily cash index price)  
Prepared by Permanent Subcommittee on Investigations, June 2009



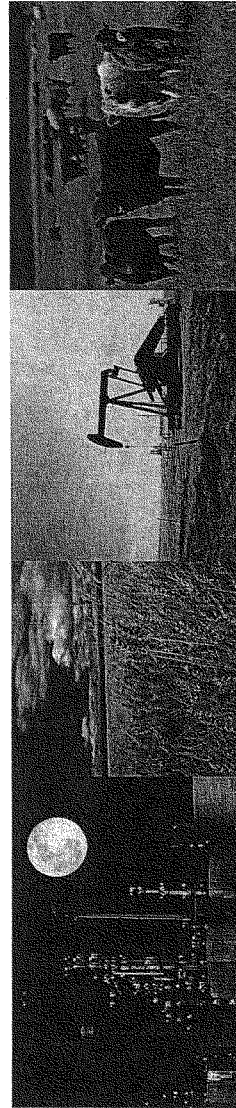


The Case for Commodities as an Asset Class

Goldman, Sachs & Co.  
June 2004

Permanent Subcommittee on Investigation

EXHIBIT #7



## Executive Summary

### GSCI: The Portfolio Diversifier; The Portfolio Enhancer

*Goldman Sachs recommends a strategic allocation to commodities as a separate asset class to hedge macroeconomic risk, decrease expected portfolio risk and to increase expected portfolio returns.*

*Investor participation in the commodity markets has grown significantly in the last 10 years.*

*A broadly diversified, long only, passive investment in the commodity markets provides investors with significant benefits*

#### ■ Counter-cyclical with Stocks and Bonds:

- Commodities are significantly negatively correlated with both Bonds and Equities, implying that even a small allocation to commodities will reduce portfolio volatility.

#### ■ High Returns:

- The GSCI historically has had high equity-like returns: +12.24% per annum (1 Jan 1970 - 31 May 2004)
- GSCI returns can be exceptional: + 41% in 1999, + 50% in 2000, +32% in 2002, +20% in 2003

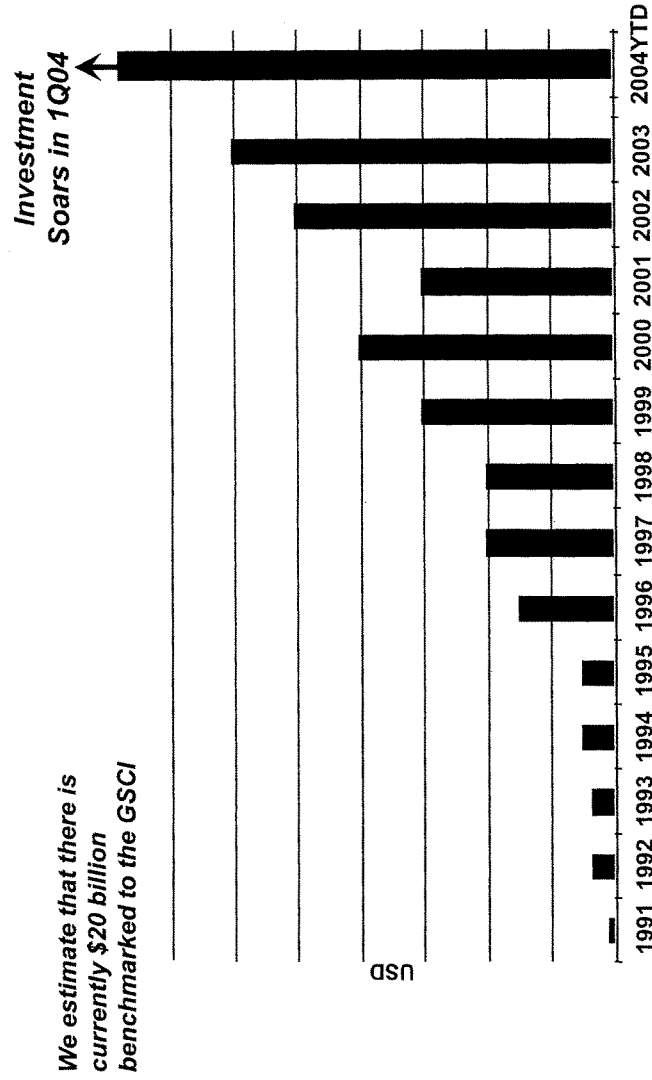
#### ■ Inflation Hedge:

- The GSCI provides a hedge against rising inflation, even when inflation is rising from a low base.

#### ■ Diversification When You Need it Most:

- The GSCI has the largest positive impact on a financial portfolio when financial assets have their worst returns. During these "hostile markets", equities and bonds tend to fall together and provide little diversification.

## Estimated Global GSCI Investment Growth



Source: Goldman Sachs

## Table of Contents

- I. What is the GSCI?*
- II. The Strategic Case*
- III. Commodity Returns: Tied to the Business Cycle*
- IV. Where Commodity Returns Come From*
- V. Energy Drives Diversification*
- VI. How to Invest*

## Appendix

- A. Liquidity*
- B. The Case for Long Run Returns*

***What is the GSCI?***

435

4

## What is the GSCI?

- The GSCI is designed to provide investors with a reliable and publicly available benchmark for investment performance in the commodity markets comparable to the S&P 500 or FT equity indices.

- The GSCI has become the premier global commodity benchmark for institutions making allocations to commodities.

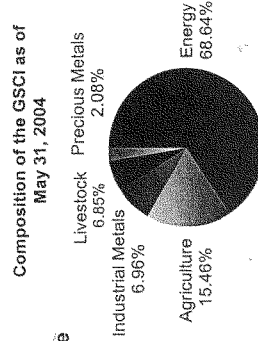
- The GSCI is a world-production weighted index, the analogue to market capitalization weighting for equities.

- The GSCI has a Futures and an Options contract listed on the Chicago Mercantile Exchange (CME) since July 1992.

- The GSCI Excess Return Index tracks an investment in a basket of world-production weighted nearby commodity futures. The index assumes you are always invested in nearby futures contracts. Therefore it is calculated by rolling forward your first nearby contracts into the next nearby contracts mechanically on the 5th-9th business day of each month using the official closing futures prices.

- The GSCI Total Return Index tracks a fully collateralized investment. In addition to tracking the rolling investment of nearby futures, it assumes for every dollar you have invested in futures you have a corresponding dollar invested in 3 month USD T-bills.

- The rules and regulations governing the GSCI are overseen by an 8 person Policy Committee including members from PGGM Pension, Government of Singapore Investment Corp, The Harvard Business School, and The Chicago Mercantile Exchange.



*The GSCI was created in 1991 and the Index based at 100 in 1970*

*The GSCI futures and options contracts were listed on the CME in July 1992*

Reuters Page : GSCI  
Bloomberg : GSCI <go>

Source: Goldman Sachs

## Goldman Sachs Commodity Index Composition

*The broad range of commodities provides the GSCI with a high level of diversification.*

*The production weights are based on the average quantity of production in the last five years of available data.*

*Production weighting provides the GSCI with significant advantages, both as an economic indicator and as a measure of investment performance.*

GSCI Composition (Percentage \$ Weights on 31May2004)					
Energy	Livestock	Agriculture	Industrial Metals	Precious Metals	
Crude Oil	26.06% Live Cattle	3.77% Wheat	3.35% Aluminum	2.99% Gold	1.88%
Heating Oil	6.93% Lean Hogs	2.27% Corn	4.28% Copper	2.36% Silver	0.20%
Unleaded Gas	8.94% Feeder Cattle	0.81% Soybeans	2.70% Zinc	0.55%	
Brent	12.04%	Kansas Wheat	1.43% Nickel	0.76%	
Gasoil	3.70%	Cotton	1.51% Lead	0.31%	
Natural Gas	10.98%	Sugar	1.20%		
		Coffee	0.74%		
		Cocoa	0.26%		
<b>Total</b>	<b>68.64% Total</b>	<b>6.85% Total</b>	<b>15.46% Total</b>	<b>6.96% Total</b>	<b>2.08%</b>

Year that Each Commodity Entered the GSCI					
Energy	Livestock	Agriculture	Industrial Metals	Precious Metals	
Crude Oil	1987 Live Cattle	1970 Wheat	1970 Aluminum	1991 Gold	1978
Brent	1999 Lean Hogs	1976 Corn	1970 Copper	1977 Silver	1973
Natural Gas	1994 Feeder Cattle	2002 Cotton	1977 Zinc	1991	
Heating Oil	1983	Soybeans	1970 Nickel	1993	
Unl. Gasoline	1988	Sugar	1973 Lead	1994	
Gas Oil	1999	Kansas Wheat	1999		
		Coffee	1981		
		Cocoa	1984		

## Who Invests in the GSCI?

Belgium  
Canada  
Denmark  
Finland  
France  
Germany  
Hong Kong  
Italy  
Luxembourg  
Netherlands  
Norway  
Saudi Arabia  
Singapore  
Spain  
Sweden  
Switzerland  
UK  
US  
etc...



GSCI was introduced over 13 years ago -  
we now have investors of all types in over 20 countries and the number is growing



*The principal purpose of the Policy Committee is to advise Goldman Sachs with respect to, among other things, the calculation of the GSCI, the effectiveness of the GSCI as a measure of commodity futures market performance and the need for changes in the composition or methodology of the GSCI.*

## Policy Committee

- Goldman Sachs has established a Policy Committee to assist it in connection with the operation of the GSCI.
- The Policy Committee currently has 8 members including numerous external investment managers.
- The Policy Committee meets on an annual basis and at other times at the request of Goldman Sachs.

### Policy Committee members:

**Gary Cohn**  
Chairman of the Committee  
Managing Director  
Goldman, Sachs & Co.

**Steven Strongin**  
Managing Director  
Goldman, Sachs & Co.

**Laurie Ferber**  
Managing Director  
Goldman, Sachs & Co.

**Richard Redding**  
Director  
Chicago Mercantile  
Exchange

**Jelle Beenen**  
Manager Commodities and  
Quantitative Strategies Investments  
PGGM

**Chia Tai Tee**  
Assistant Director, Investment Policy  
and Strategy  
GIC

**Stuart Porter**  
Vice President, Portfolio  
Management  
Harvard Management Co

**Kenneth A. Froot**  
Andre R. Jakurski Harvard Business  
School Professor of Finance

### Committee Advisors:

**Oliver Frankel**  
Committee Advisor  
Managing Director  
Goldman, Sachs & Co.

**Heather Shemilt**  
Committee Coordinator  
Managing Director  
Goldman, Sachs & Co.

**David Gilberg**  
Legal Advisor  
Sullivan & Cromwell

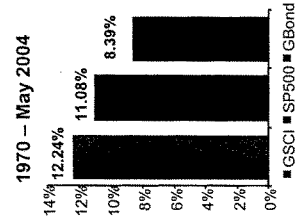
## ***The Strategic Case***

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## The Strategic Case: Why Clients Have Commodities In Their Portfolio

GS recommends a permanent strategic holding in commodities as a 'separate asset class' to hedge macroeconomic risk, decrease expected portfolio risk and increase expected portfolio returns.

Asset Class Annual Returns  
1970 – May 2004



■ **Commodities are significantly negatively correlated** with both Bonds and Equities. This implies that the volatility of a portfolio can be significantly decreased even by allocating only a small percentage of the portfolio to commodities.

■ **The GSCI historically has had high equity-like returns** (12.24% per annum since 1970 as of May 31, 2004).

■ **Commodities perform best when other assets perform worst.** The GSCI has the largest positive impact on a financial portfolio when financial assets have their worst returns. During these "hostile markets", equities and bonds tend to fall together and provide little diversification.

■ **The GSCI provides a hedge against rising inflation.** Commodities are the only asset class we have found that performs well when inflation is rising, even from a low base. Other traditional inflation hedges only perform well when inflation is high and rising.

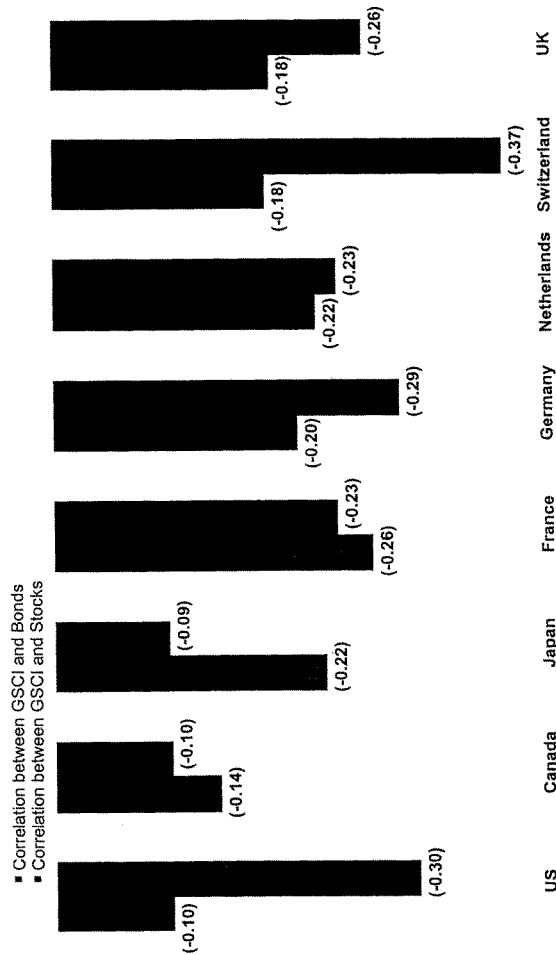
**Commodities offer the best macroeconomic hedge against stronger growth.**

Commodities, in sharp contrast to more traditional financial assets, are more directly tied to current economic conditions. As a result, they tend to generate their best returns in periods of high economic activity and worst returns in periods of low activity. Thus, we find that as the level of economic activity rises, the expected returns for financial assets fall, while the expected returns for commodities rise.

Source: Goldman Sachs.

*The GSCI is significantly negatively correlated with financial assets (both bonds and equities). Most importantly, the GSCI has the largest positive impact on a financial portfolio when financial assets have their worst returns.*

## Negative Correlation GSCI Correlation with Global Financial Assets Dec 1987 - Dec 2003 Quarterly Correlations



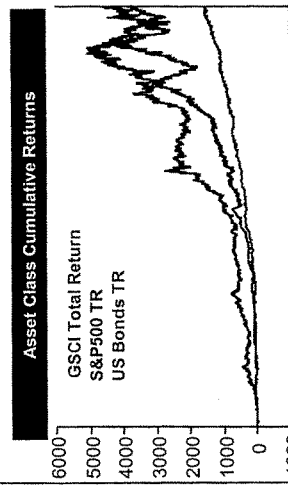
Correlations between quarterly returns of the GSCI in local currency and the financial asset. For bonds: JPM Total Return Government Bond Index of the respective country in local currency. Exception: for Switzerland the returns of 10y SWAP were converted into total returns. For Equity: S&P500 Total Return Index, Toronto 300TR, Nikkei 225, CAC 40, DAX, Amsterdam Stock Exchange Index (AMS), SBC Index & Zurich Stock Exchange Index (SMI), FTSE - UK all share.

Source: Goldman Sachs.

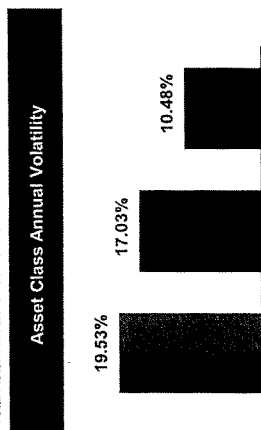
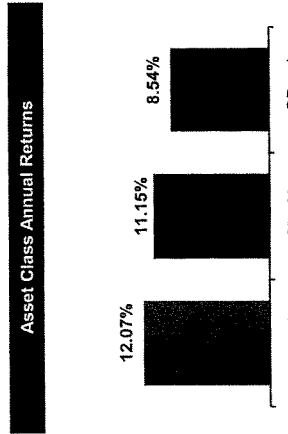
# High Equity-Like Returns Asset Class Performance 1970 – Mar 2003

The GSCI historically has had high equity-like returns (12.07% per annum since 1970 as of 31Mar04). These high returns coupled with the negative correlation have historically meant that adding commodities to a balanced portfolio not only lowers the overall portfolio volatility but at the same time increases the overall portfolio return.

The efficiency, or Sharpe Ratio, is improved significantly.



Source: JP Morgan US Government Bond Index for GBond, S&P500 Total Return Index for S&P500 and GSCI Total Return Index for GSCI.



Note: Volatilities are derived from quarterly returns.  
Source: Goldman Sachs.

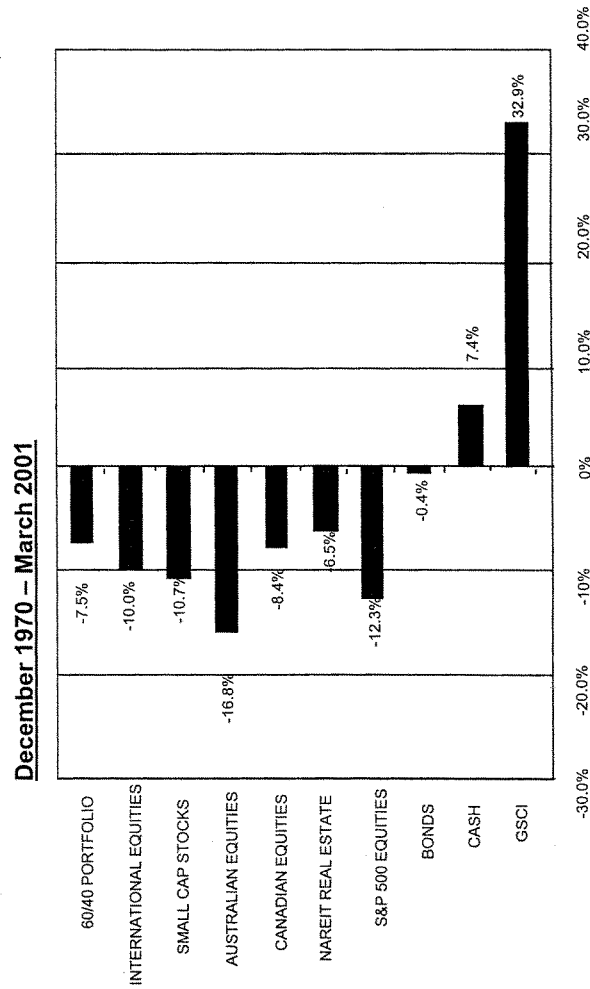
The Effect of adding GSCI to a 60/40 Stock/Bond Portfolio GSCI added at the Expense of Bonds

% GSCI	Returns	Volatility	Sharpe Ratio
0%	10.82%	12.15%	0.37
5%	11.04%	11.60%	0.40
10%	11.27%	11.16%	0.44
15%	11.50%	10.82%	0.47
20%	11.72%	10.60%	0.51
25%	11.95%	10.52%	0.53
30%	12.18%	10.56%	0.55
35%	12.40%	10.73%	0.56
40%	12.63%	11.03%	0.57

Note: Portfolio was rebased and geometrically compounded on a quarterly basis. If an efficiency frontier was computed using arithmetic returns, the outcome would have been similar.

Commodities are negatively correlated to other asset classes and significantly outperform when the portfolio needs diversification most.

## Commodities Perform Best When the Financial Portfolio Performs Worst



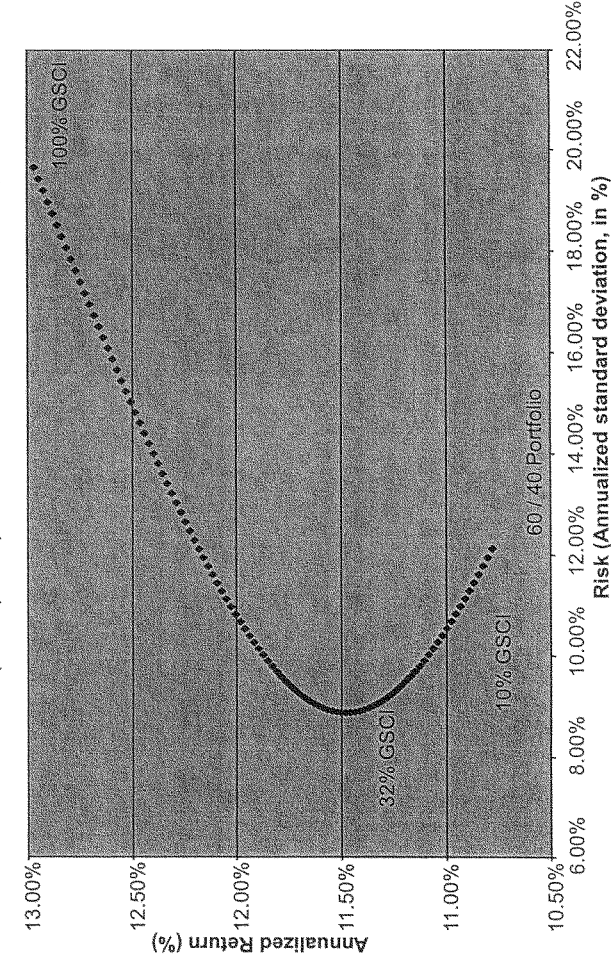
We reviewed returns for a typical 60/40% balanced portfolio for Dec 1970-March 2001. From this period we looked at the periods when the portfolio posted its 10% worst returns and plotted the returns for other assets during those same periods.

Source: GS Research

Efficiency Frontier

Risk / Return Analysis of a Balanced Portfolio (60% equities / 40% fixed income) whilst Adding in GSCI on a Pro-Rata Basis.

(Note: quarterly data from 31-Dec-1969 to 31-Mar-03)



Source: Goldman Sachs.

Viewed in a portfolio context, a GSCI investment can increase returns and reduce volatility at the same time.

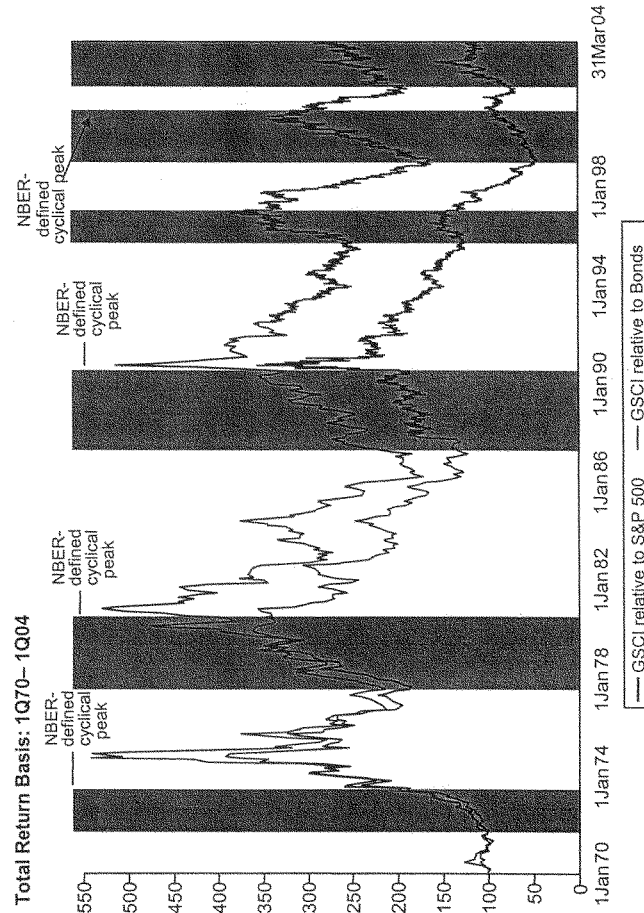
## ***Commodity Returns: Tied to the Business Cycle***

446



*A lack of investment in commodity infrastructure over the past 5 years, driven primarily by significant over-investment in the technology and telecommunication sectors, has resulted in substantial capacity constraints which are already resulting in much higher commodity returns much earlier in the business cycle.*

## Commodities: Firmly Tied to the Business Cycle GSCI Relative to U.S. Stocks and Bonds



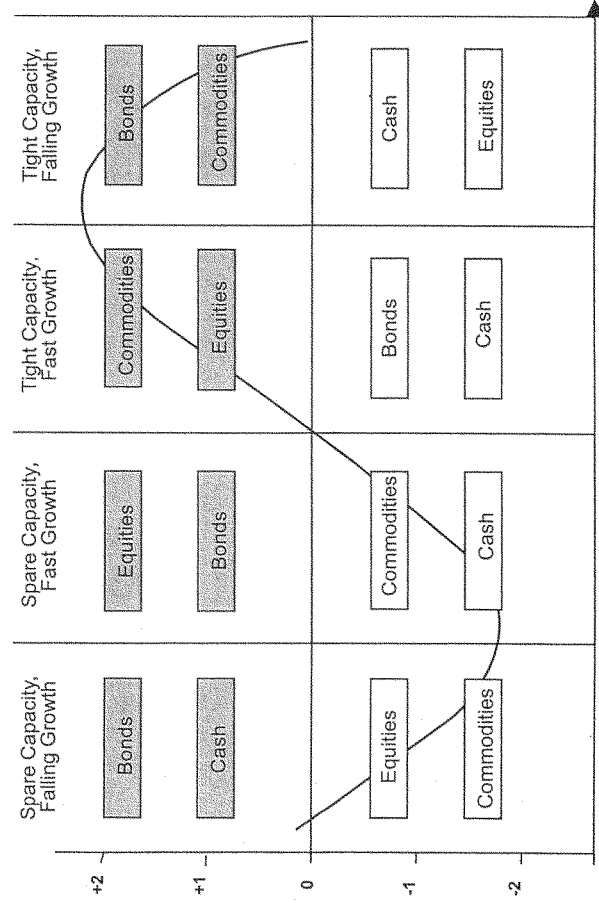
Source Bonds: Ibbotson U.S. government bond series through December 1993. JP Morgan world bond index from December 1993 to present. Source US Stocks: Ibbotson, S&P.

## Commodity Returns: Tied to the Business Cycle

Both equities and bonds (international and domestic) tend to perform best when economic conditions are worst and the potential for improvement is highest; and tend to perform worst when the economy is strong and there is the greatest potential for negative surprises.

Commodities, in sharp contrast to more traditional financial assets, are more directly tied to the current economic conditions. As a result, they tend to perform best in periods of high economic activity and worst in periods of low activity.

Thus we find that as the level of economic activity rises, the expected returns for financial assets fall, while the expected returns for commodities rise.



■ = Best-Performing Asset Classes

•The chart depicts the business cycle in terms of the Global Output Gap (When Actual GDP exceeds Potential GDP)

•Please note that the 4 business cycle periods above are not equal in duration.

## Exceptional GSCI Returns When You Need It Most

	60Eq/40FI	GSCI	60Eq/30FI/10 Comm	57Eq/38FI/5 Comm
1970	7.68%	15.10%	8.13%	8.16%
1971	14.00%	21.08%	14.79%	14.37%
1972	13.57%	42.43%	17.07%	14.91%
1973	-9.35%	74.96%	-3.48%	-6.03%
1974	-14.51%	39.51%	-11.10%	-11.88%
1975	26.12%	-17.22%	23.88%	24.17%
1976	21.17%	-12.47%	18.06%	19.41%
1977	-4.59%	11.06%	-3.40%	-3.80%
1978	3.59%	31.61%	6.78%	4.94%
1979	10.34%	33.81%	13.77%	11.45%
1980	17.54%	11.08%	19.19%	17.27%
1981	-2.19%	-23.01%	-4.64%	-3.21%
1982	29.07%	11.56%	26.36%	28.28%
1983	13.52%	16.26%	15.14%	13.66%
1984	9.91%	1.05%	8.59%	9.53%
1985	31.86%	10.01%	29.75%	30.78%
1986	20.96%	2.04%	19.03%	20.19%
1987	4.16%	23.77%	6.48%	5.13%
1988	11.43%	27.93%	13.28%	12.27%
1989	26.29%	38.28%	28.32%	26.90%
1990	0.71%	29.08%	4.53%	2.93%
1991	26.04%	-6.13%	23.29%	24.33%
1992	6.62%	4.42%	6.60%	6.53%
1993	10.07%	-12.33%	7.70%	8.88%
1994	-0.33%	5.29%	0.55%	-0.01%
1995	29.68%	20.33%	29.98%	29.25%
1996	14.97%	33.92%	17.97%	15.87%
1997	23.47%	-14.07%	20.79%	21.41%
1998	21.43%	-35.75%	15.78%	18.02%
1999	12.19%	40.92%	16.39%	13.60%
2000	-1.06%	49.74%	4.61%	3.19%
2001	-3.36%	31.93%	-7.71%	-4.94%
2002	-9.42%	32.07%	-7.64%	-7.55%
2003	18.65%	20.72%	20.40%	19.52%

	60Eq/40FI	GSCI	60Eq/30FI/10 Comm	57Eq/38FI/5 Comm
Annualized Return	10.50%	11.85%	11.17%	10.82%
Standard Deviation	12.26%	19.81%	11.22%	11.69%
Sharpe Ratio	33.76%	27.69%	42.80%	38.09%
Annual returns of 60/40 <0%	-5.72%	14.52%	-4.22%	-4.38%
Annual returns of 60/40 <-5%	-11.13%	47.72%	-7.46%	-8.52%

- The highlighted rows indicate years in which a 60% Equity/ 40% Bond Portfolio exhibits negative returns.
- In these years when the financial portfolio exhibits negative returns the GSCI typically exhibits strong returns and provides diversification when you need it most.

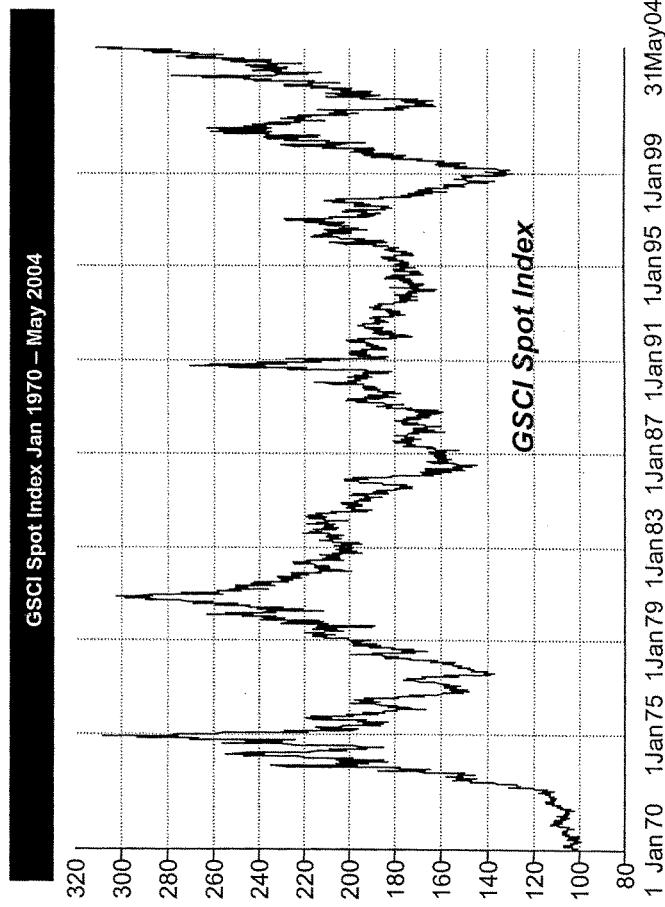
## ***Where Commodity Returns Come From***

450

## An Investment in the GSCI is Not Only an Investment in Commodity Prices

*An investment in commodities is NOT only an investment in the change in commodity prices.*

*Commodity prices have been highly cyclical, historically generating annualized returns of only 3.26% from 1Jan70 to 31May04.*

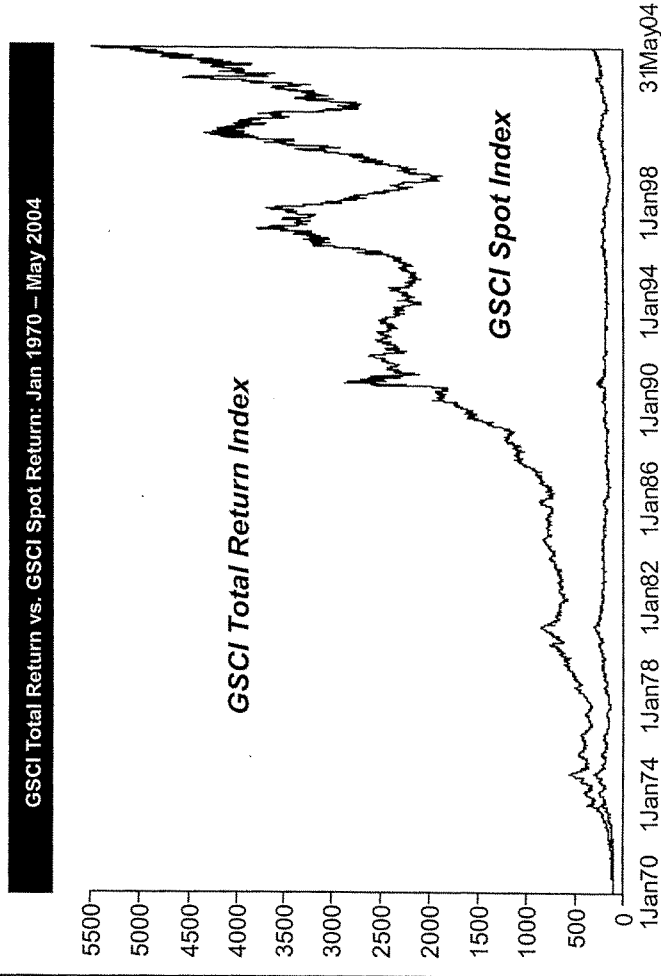


Source: Goldman Sachs.

## An Investment in Commodity Returns has Historically Exhibited High Equity-Like Returns

Historically, the GSCI Total Return Index has exhibited excellent returns (i.e. 12.24% annualized returns from Jan 1, 1970 – May 31, 2004)

Meanwhile, the GSCI Spot Index, which simply measures the changes in commodity prices, has only returned a mere 201.41% since the index was based at par in 1970 (3.26% annualized returns)



Source: Goldman Sachs.

## Contango “Normal” Upwardly Sloped Forward Curve

*In commodity markets the “full carry” forward price curve represents only the upper limit that prices can trade at.*

*Key to commodity market returns is that the forward market price does not have to trade at the “full carry” fair forward price (as they must in financial markets).*

*As detailed in the example to the right, they will not trade higher than the fair forward price but they can and regularly do trade at a substantial discount to the fair forward price. Indeed the forward prices often trade below spot prices (which is referred to as backwardation)*

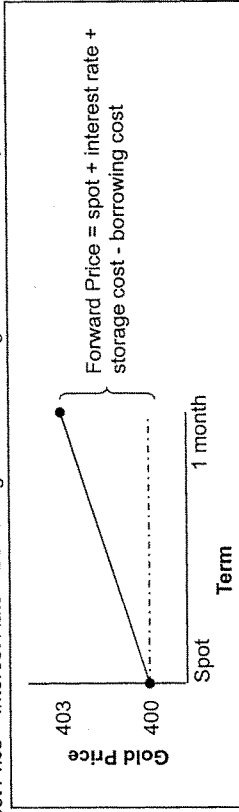
Just like financial assets, you can calculate the “full carry” fair forward price of a commodity:

**Financial Formula:**

Spot Price + Interest Rate – Borrowing Costs – Dividend/Coupon = Full Carry Fair Forward Price

**Commodity Formula:**

Spot Price + Interest Rate – Borrowing Costs + Storage Costs = Full Carry Fair Forward Price



In the case of stocks and bonds, the “full carry” forward price must be the equal to the forward price, otherwise there is an arbitrage opportunity.

Commodities, on the other hand, regularly do not trade at the “full carry” forward price. However note that like financial markets they can not trade higher than the “full carry” forward price.

*E.g., suppose that gold is trading at \$400 and it's fair value forward price is \$403. If gold trades higher than \$403 (e.g. \$403.10) an arbitrage opportunity exists. I.e. you could buy spot gold at \$400 and then sell forward at 403.10 locking in a minimum \$0.10 per oz profit (your costs include the interest paid to borrow the \$\$ to finance the purchase today plus storage fees; profit is the difference you sell it for above those costs)*

## Backwardated Forward Curves: Commodities are Different

The returns from holding physical commodities do NOT equal the returns from a GSCI-style investment.

A GSCI-style investment is an investment that tracks the returns from:

1. being invested in front month futures
2. rolling forward those futures each month on the 5th to 9th business day, just prior to expiration of the contract.

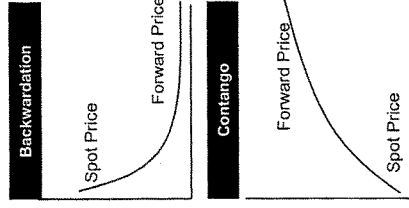
**Convenience Yield:** The market often pays a premium for readily available commodities and this is reflected in an inverted (backwardated) forward price curve.

This backwardation can be exaggerated given that:

- Commodities are often not borrowable.
- Commodities are often difficult to store.

When forward prices are below spot prices, commodity investment returns are significantly higher than the change in spot prices.

Unlike in contango markets, there is no limit to the degree of backwardation that can prevail in commodity markets.





## Theoretically: Why Should Commodities Generate Long Run Returns? *The Keynes Argument*

The Future of Commodity Returns Does Not Depend on the Long-term Outlook for Commodity Prices.

Commodity Returns are Based on Real Economics and Depend on the Balance Between Supply and Demand for Risk Capital in the Commodity Markets.

### Investor Capital in Financial and Commodity Markets

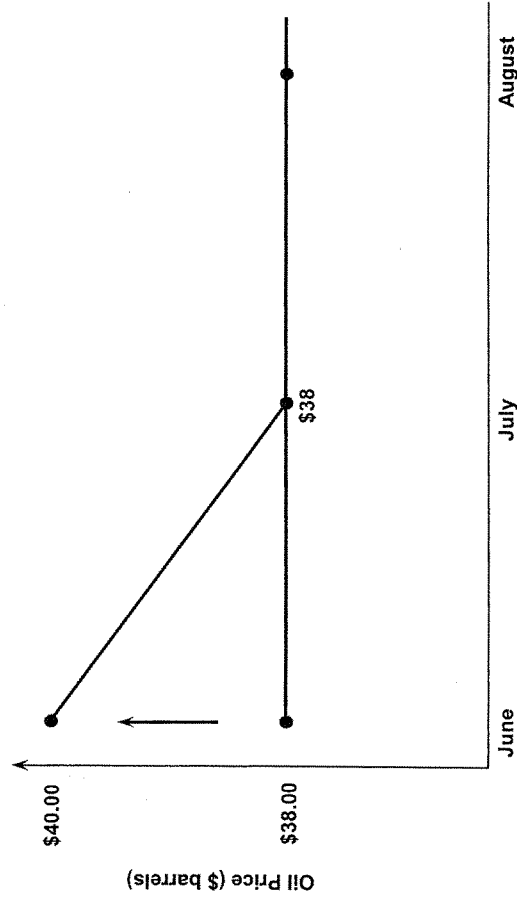
- Investors providing capital to equity and fixed income markets are providing capital for ongoing operations of a particular enterprise and returns are generated by the ongoing viability of that enterprise.
- Investors in commodity markets do not directly provide capital to the commodity producers.
- Instead, the investors long positions in commodity futures allows the producing firms to externalise their short-term commodity price risk via hedging (ie. The commodity producers take the short side of the futures). This hedging activity allows the producers to better utilise their existing capital.
- Commodity hedging is key to the commodity producers business by allowing the firm to separate its business risk - the ability to produce at low cost and market desirable products (the core function of equity risk-capital) from its commodity price risk.

## Fundamentally: Why Should Commodities Generate Long Run Returns? *The Shortage Dynamic and Oil Returns*

When inventories are low relative to demand, the market is vulnerable to temporary front month price spikes.

In the oil market, you can often get unexpected surges in demand (due to cold weather, increased transport demand, etc.) or disruptions in supply (due to weather problems, political disruption or maintenance breakdown).

When there is an insufficient "buffer" of inventories, front month prices can move up sharply.



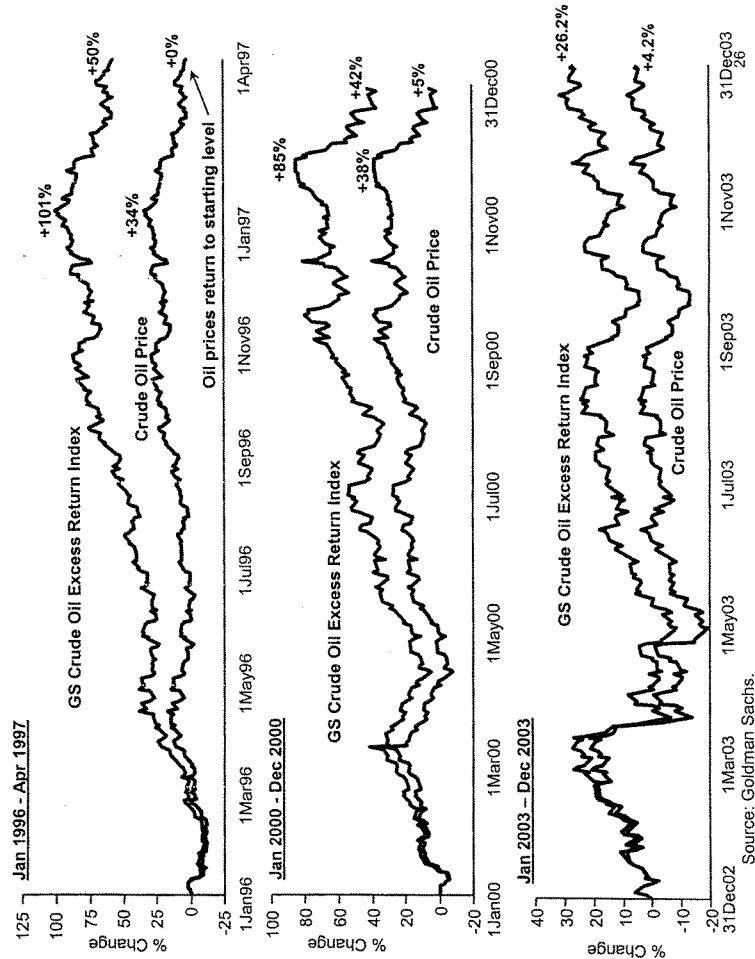
## Returns from Rolling Futures Contracts in the Oil Market

*The WTI Crude Oil Excess return index measures an investment in front month crude oil rolled forward each month to the next nearby contract keeping you continuously invested in prompt oil futures, and thereby allowing you to take maximum advantage of potential backwardation.*

*Investment returns, as measured by the oil excess return index can be substantially higher than oil spot price changes.*

*The cumulative effect of backwardation due to temporary price spikes can produce substantial returns.*

*Prices do not need to be trending upwards to produce substantial returns.*



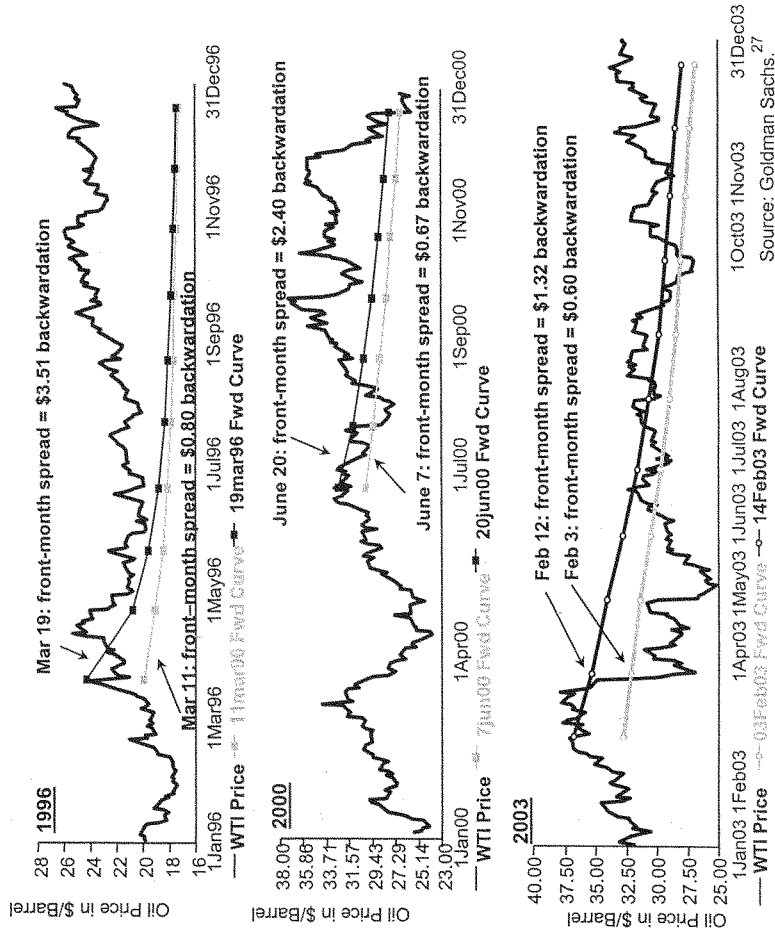
## Temporary Price Spikes Create Significant Backwardation

*In a GSCI-style investment, the investor can capitalize on front month price spikes.*

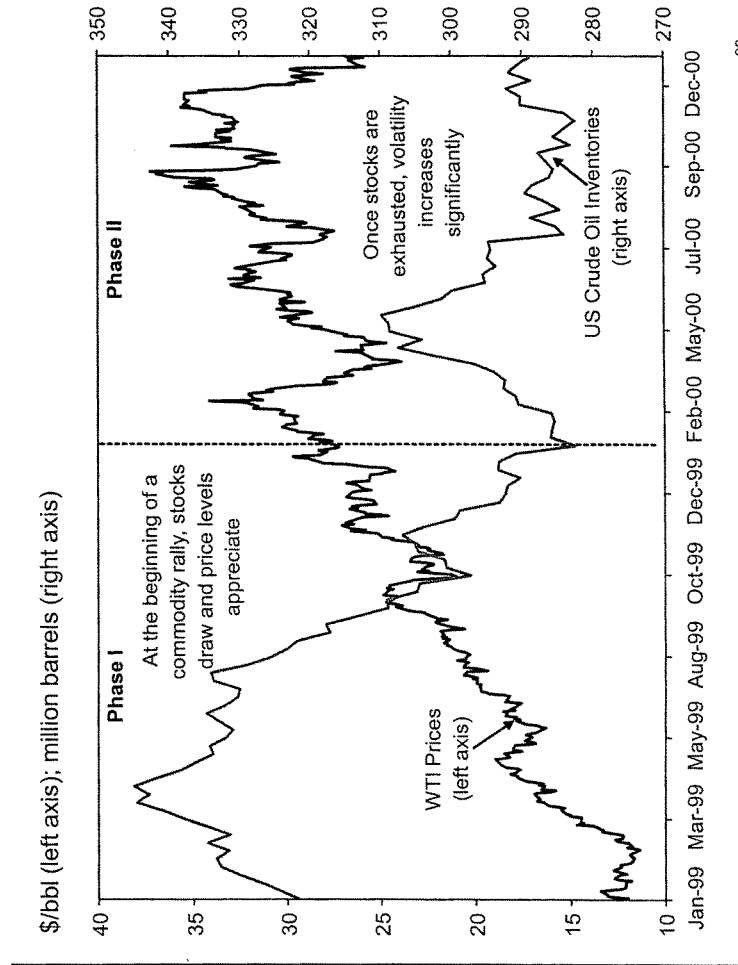
*Here, for example, the market is willing to pay a premium for "front month oil" to satisfy an immediate need for that commodity.*

*When demand is strong and inventories are scarce, the front end of the curve can steepen into extreme backwardation very quickly. This allows the investor to sell his long position substantially above the one month forward price where he re-establishes the position.*

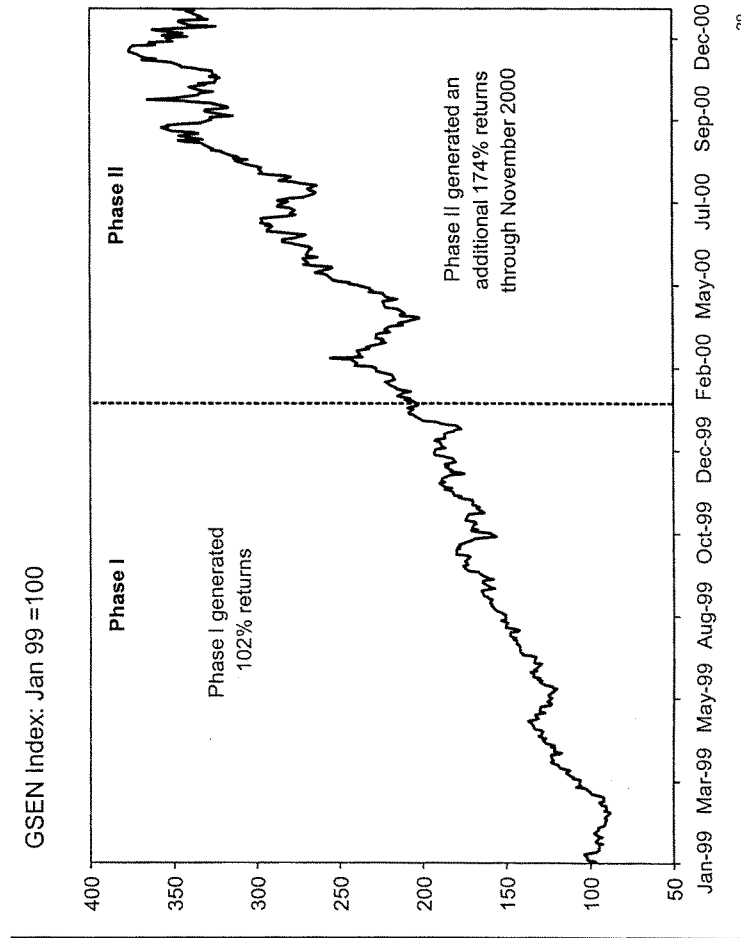
*The investor earns significant returns from price spikes, even if those spikes are temporary.*



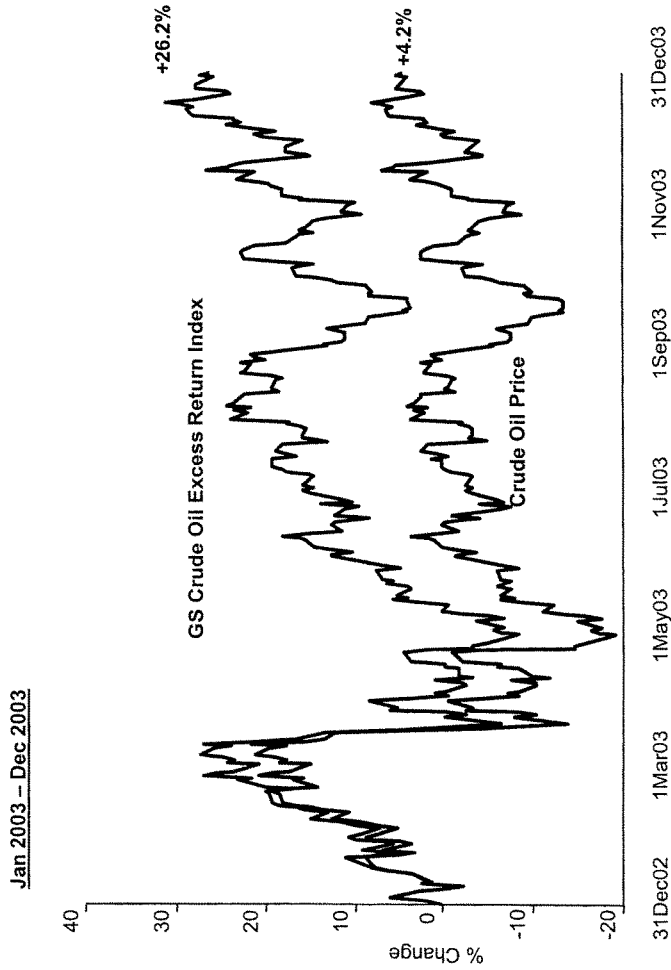
## The 2 Phases of a Commodity Price Rally



## Significant Returns Follow in Phase II



## Returns from Rolling Futures Contracts in the Oil Market



*The WTI Crude Oil Excess return index measures an investment in front month crude oil rolled forward each month to the next nearby contract keeping you continuously invested in prompt oil futures, and thereby allowing you to take maximum advantage of potential backwardation.*

*Prices do not need to be trending upwards to produce substantial returns.*

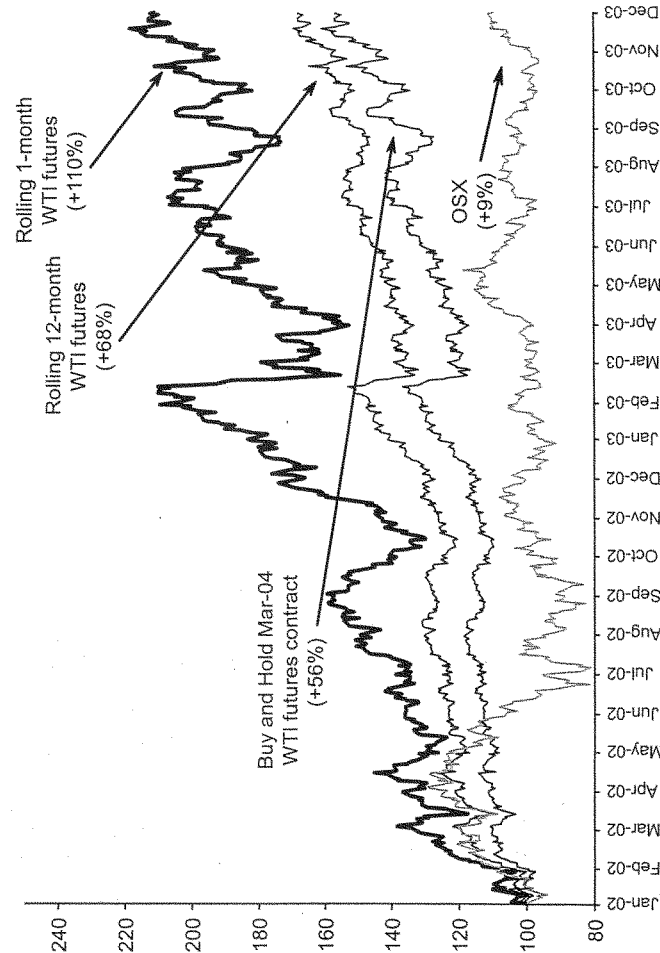
Source: Goldman Sachs.

## When to Buy Commodities Rather Than Commodity Related Stocks

Based on a view of the commodity, a direct investment (eg via the GSCI) is the preferred investment vehicle.

Direct commodity investments provide substantial additional returns during periods of shortage relative to equity investments.

OSX = Philadelphia Stock Exchange Oil Service Sector Index

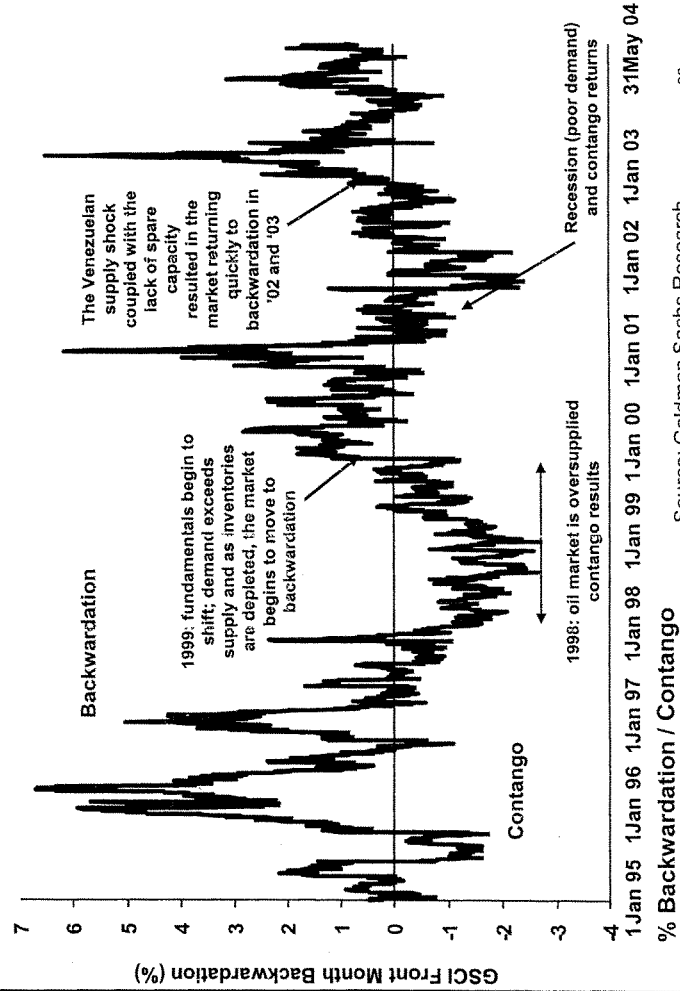




## Backwardation of the GSCI

January 1995 – May 31, 2004

This graph represents the percentage backwardation or contango between the 1st and 2nd month futures contracts on the GSCI



The GSCI futures contract has been in backwardation 50% of the time.

However, note that there is no limit to backwardation.

Contango, meanwhile, is limited to the "full carry" fair forward (i.e. the spot price plus financing and storage costs)

Source: Goldman Sachs Research

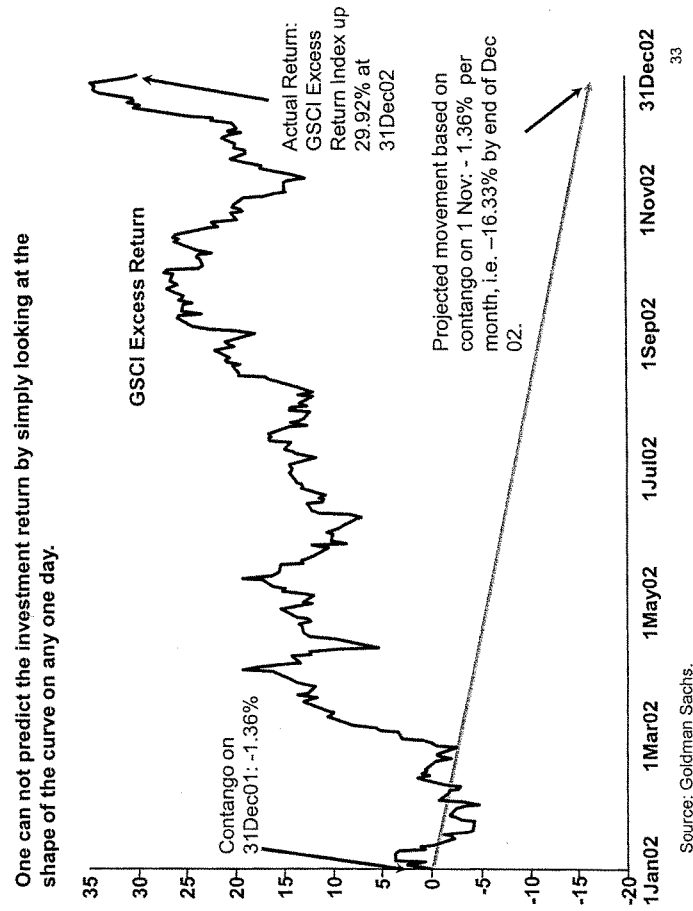
## Investment Returns in the Commodity Markets

### GSCI Excess Return Index and Projected Returns

#### Jan02 – Dec02

*If we only looked at the 1.36% contango that existed in the commodity market on 31Dec.01 and extrapolated that forward, it would have suggested a -16.33% negative return by the end of Dec02. In fact, the GSCI Excess Return Index was up 29.92% at the end of Dec02.*

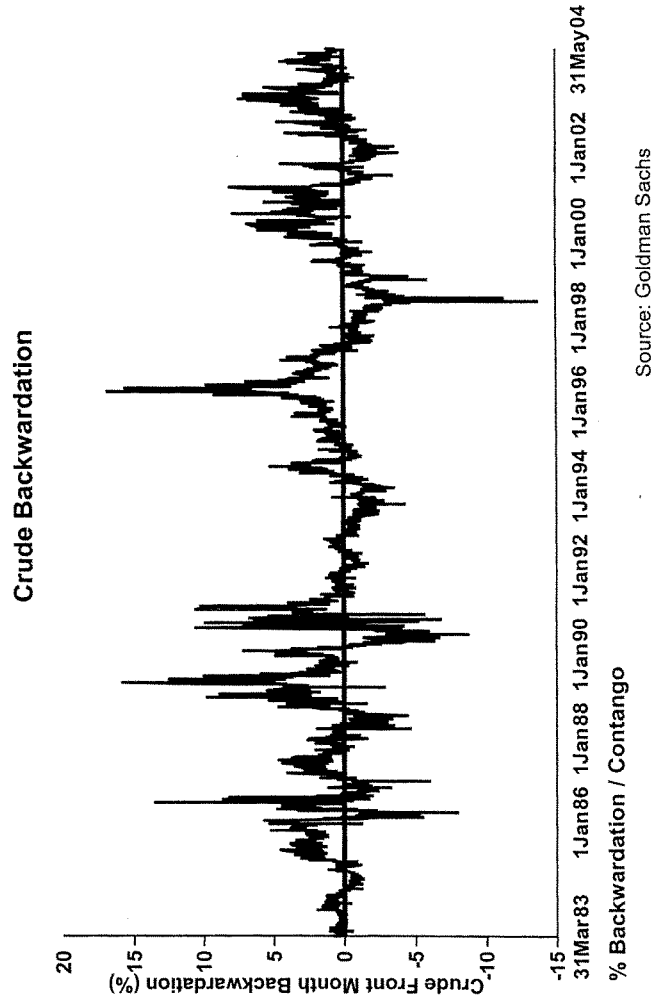
*The best prediction of the forward return will be one based on the determination of the fundamental supply / demand equilibrium*



## Backwardation in WTI Crude Oil March 1983\* – May 31, 2004

(\*WTI futures first started trading in March 83)  
This graph represents the percentage backwardation or contango between the 1st and 2nd month futures contracts for NYMEX WTI Crude Oil

Since inception of NYMEX WTI Crude Oil futures, the contract has been in backwardation 66% of the time delivering an average yield of 0.76% per month.



Backwardation is not a Temporary Phenomenon

From the inception of NYMEX WTI Crude Oil futures, to 31 May 2004, WTI has been in backwardation 66% of the time.

	Observations (Days)	No. of days settled in backwardation	% of observations in backwardation
GSCI (1)	2984	1514	51%
Crude Oil	5306	3496	66%
Lean Hogs	5344	2739	51%
Live Cattle	5343	2797	52%
Wheat	5340	1697	32%
Copper	5337	1956	37%
Gold	5316	0	0.0%

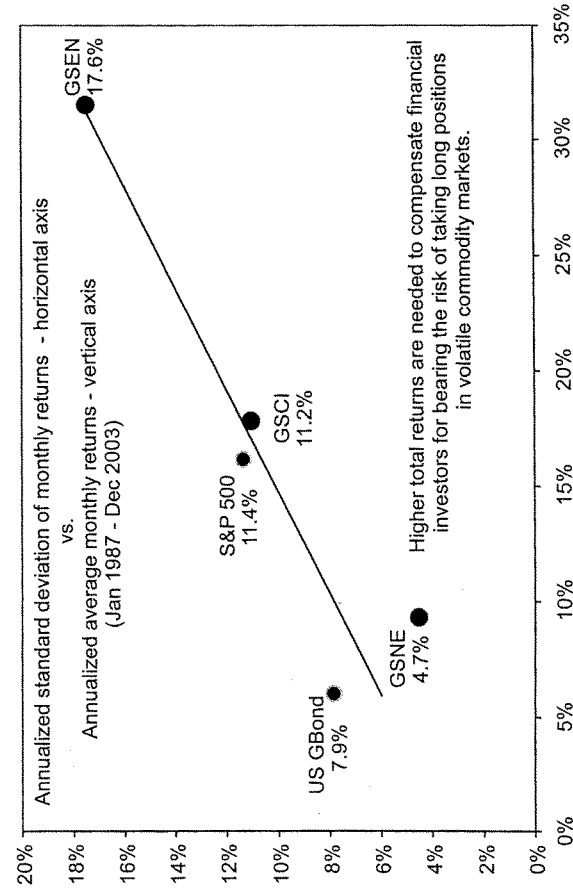
(1) The GSCI futures backwardation data begins on 29 Jul '92

## ***Energy Drives Diversification***

**The GS Energy Sub-index generates higher average returns than the overall GSCI, the GS Non-Energy Sub-index, equities and bonds.**

**Importantly, despite higher volatility, on a risk-reward basis the GS Energy Sub-index substantially outperforms the Non-Energy Sub-index.**

## Standard Deviation vs. Mean Returns for GSCI, GS Energy, GS Non-Energy, Equities, and Bonds



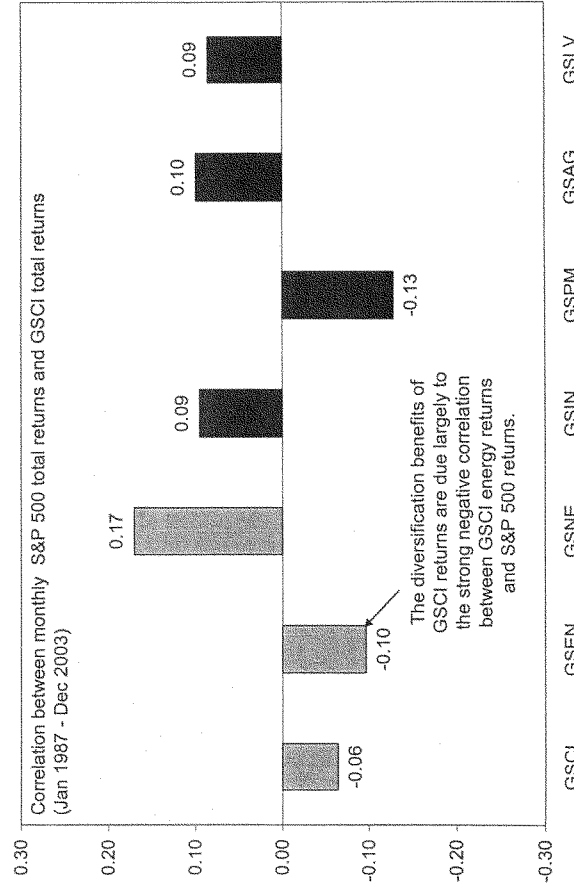
Source: Goldman Sachs

*GS Energy Sub-index returns are negatively correlated with S&P 500 returns, providing diversification benefits to investors.*

*In contrast, Non-energy Sub-index returns are positively correlated with equity returns.*

*Precious Metals are also negatively correlated but have the lowest return profile of all the sub-indices & therefore offer little portfolio diversification*

## Correlation between GSCI and GS Sub-indices to SP500 Monthly Observations



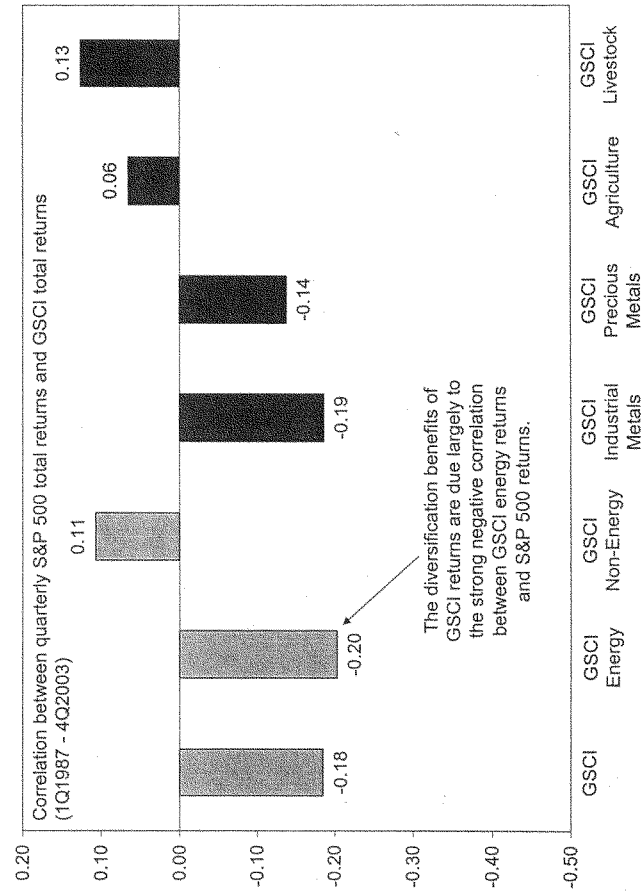
Source: Goldman Sachs

## Correlation between GSCI and GS Sub-indices to SP500 Quarterly Observations

*GS Energy Sub-index returns are negatively correlated with S&P 500 returns, providing diversification benefits to investors.*

*In contrast, Non-energy Sub-index returns are positively correlated with equity returns.*

*Precious Metals are also negatively correlated but have the lowest return profile of all the sub-indices & therefore offer little portfolio diversification*



Source: Goldman Sachs



**Risk and Reward Statistics by Macro Environment**  
**Monthly Observations: Industrial Production Level and Change Relative to Trend**

Performance of the GSCI Energy Sub-Index by Economic Environment  
(Jan 1987-Dec 2003)

Monthly changes in US IP					
US IP relative to trend	ABOVE	RISING		FALLING	
		Average Return	32.17%	22.52%	
		Standard Deviation of returns	37.11%	25.88%	
		Sharpe Ratio	0.87	0.87	
	BELOW	Average Return	7.94%	-2.97%	
		Standard Deviation of returns	26.11%	28.78%	
		Sharpe Ratio	0.30	-0.10	

Performance of the GSCI Index by Economic Environment  
(Jan 1987-Dec 2003)

Monthly changes in US IP				
US IP relative to trend	ABOVE	Average Return	RISING	FALLING
		Standard Deviation of returns	17.85%	10.27%
		Sharpe Ratio	20.70%	15.21%
		Sharpe Ratio	0.86	0.68
	BELOW	Average Return	9.04%	-3.18%
		Standard Deviation of returns	15.28%	18.16%
		Sharpe Ratio	0.59	-0.17

Performance of the GSCI Non-Energy Sub-Index by Economic Environment  
(Jan 1987-Dec 2003)

Monthly changes in US IP					
US IP relative to trend	ABOVE	RISING		FALLING	
		Average Return	2.53%	-4.07%	
		Standard Deviation of returns	9.64%	8.98%	
		Sharpe Ratio	0.26	-0.45	
	BELOW	Average Return	10.38%	0.23%	
		Standard Deviation of returns	9.13%	8.93%	
		Sharpe Ratio	1.14	0.03	

Source: Goldman Sachs

*The GS Energy Sub-index outperforms the overall index on a risk reward basis when macro-economic activity is above trend.*

**Risk and Reward Statistics by Macro Environment**  
**Quarterly Observations: Real GDP Level and Growth Relative to Trend**

Performance of the GSCI Energy Sub-Index by Economic Environment  
(1Q1987-4Q2003)

G7 Real GDP Level Relative to Trend	G7 Real GDP Growth Relative to Trend			
	ABOVE	Average Return	RISING	FALLING
		Standard Deviation of returns	24.34%	20.36%
		Sharpe Ratio	30.63%	74.33%
			0.79	0.27
	BELOW	Average Return	10.54%	3.34%
		Standard Deviation of returns	29.58%	24.34%
		Sharpe Ratio	0.36	0.14

Performance of the GSCI Index by Economic Environment  
(1Q1987-4Q2003)

G7 Real GDP Level Relative to Trend	G7 Real GDP Growth Relative to Trend			
	ABOVE	Average Return	RISING	FALLING
		Standard Deviation of returns	20.07%	9.20%
		Sharpe Ratio	15.43%	42.49%
			1.30	0.22
	BELOW	Average Return	10.36%	1.50%
		Standard Deviation of returns	14.71%	15.25%
		Sharpe Ratio	0.70	0.10

Performance of the GSCI Non-Energy Sub-Index by Economic Environment  
(1Q1987-4Q2003)

G7 Real GDP Level Relative to Trend	G7 Real GDP Growth Relative to Trend			
	ABOVE	Standard Deviation of returns	RISING	FALLING
		Standard Deviation of returns	12.79%	-8.46%
		Sharpe Ratio	8.43%	8.38%
			1.52	-1.01
	BELOW	Average Return	5.97%	1.50%
		Standard Deviation of returns	9.45%	15.25%
		Sharpe Ratio	0.63	0.10

Source: Goldman Sachs

The GS Energy Sub-index outperforms the overall index on a risk reward basis when macro-economic activity is above trend.

## ***How to Invest***

473

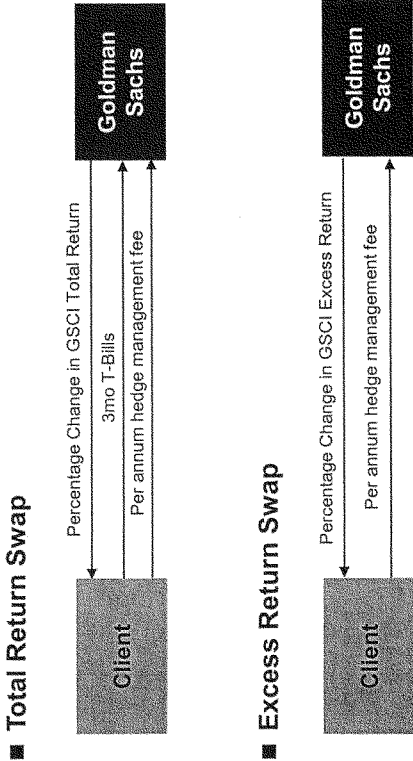
42

## Ways To Invest in the GSCI

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- Swaps
- Structured Notes
  - Options
- GSCI Futures Contract
- Third Party Asset Managers

1. Implementation via Swaps



*The majority of  
GSCI investors  
buy over-the-  
counter swaps*

## Implementation via Swaps

<b>Description:</b>	Investor enters into an over-the-counter swap agreement between client and GS, where: (a) the client receives the total return on the GSCI index or subindex versus paying GS 3 month T Bills plus the per annum hedge management fee – <b>Total Return Swap</b> (b) the client receives the excess return on the GSCI index or subindex versus paying GS the per annum hedge management fee – <b>Excess Return Swap</b>
<b>Minimum size:</b>	\$5 million notional
<b>Indicative fee/economics:</b>	Per annum hedge management fee on notional amount e.g.: 75 bps per annum on notional amounts <\$50mm 50bps per annum on notional amounts > \$100mm
<b>Term:</b>	Usually one year, with monthly resets. Can be unwound at any time - no early unwind penalty fee.
<b>Documentation:</b>	Requires an ISDA and CSA agreement with Goldman Sachs.
<b>Other:</b>	Most commonly used by large institutional investors with strategic allocations to commodities, including pension funds, insurance companies etc.  Total Return Swaps are recommended over Excess Return Swaps: Overtime TR swaps tend to outperform ER + T-bills, due to the reinvestment of T-Bill collateral yield into the commodity investment

45

GSCI Total Return Swaps are recommended over GSCI Excess Return Swaps.

## Implementation via Swaps Total Return Swaps vs. Excess Return Swaps

- It is important to note that the GSCI Excess Return plus T-bills does not equal the GSCI Total Return because it ignores the impact of the re-investment of T-bill collateral yield back into the commodity investment

	1999	2000	2001	2002	2003
3 Month T-Bill	4.86%	6.17%	3.43%	1.64%	1.04%
GSCI Excess Return	34.39%	41.10%	-34.31%	29.92%	19.48%
Total T-Bills and ER	39.25%	47.27%	-30.88%	31.56%	20.52%
GSCI Total Return	40.92%	49.74%	-31.93%	32.07%	20.71%
Forfeited Return from Investment in ER Swaps	1.67%	2.47%	-1.05%	0.51%	0.19%

*Structured notes  
are a way to gain  
commodity  
exposure but at the  
same time to limit  
your downside risk*

## 2a. GSCI-linked Notes

<b>Description:</b>	GSCI linked notes are bonds issued by highly rated (AA or better) third parties where the returns of the bond are linked to the performance of the GSCI Excess Return Index or any individual sub-component of the GSCI  Notes are zero coupon instruments that pay a participation in the underlying index return at maturity. Most structured notes are principal protected between 90% and 100%
<b>Minimum size:</b>	\$15 million notional to issue a new note  Smaller individual orders may be aggregated to reach the necessary threshold
<b>Indicative fee/economics:</b>	No fees to an investor to purchase Notes.  Pricing will fluctuate with interest rates and volatility  Secondary market liquidity is available at a bid-ask spread of 1.5 point
<b>Term:</b>	Out to 5 years
<b>Documentation:</b>	Notes are SEC registered
<b>Other:</b>	Notes can be structured to provide a more specific return profile by averaging observations, or adding upside leverage to the payout formula



## GSCI-linked Notes - Sample Term Sheet

<b>Issuer:</b>	TBD
<b>Form:</b>	Medium Term Note
<b>Trade Date:</b>	TDB
<b>Settlement Date:</b>	Trade date + 2 weeks
<b>Maturity Date:</b>	Settlement date + [X] years
<b>Issue Size:</b>	[\$YY] million; minimum \$15 million
<b>Issue Price:</b>	100.00%
<b>Coupon:</b>	0.00% on an annual bond basis
<b>Redemption:</b>	[AA]% + [BB] x (GSCI-ER Index - STRIKE)/ Begin, subject to a minimum of [AA%]
<b>STRIKE=GSCI Begin:</b>	[CC]
<b>Current GSCI Level:</b>	[CC]
<b>Where</b>	GSCI-ER means the closing value of the GSCI-ER taken by the Calculation Agent on the close of business 5 days prior to the Maturity Date from Reuters page GSCI
<b>Minimum Denominations:</b>	\$50,000 (and \$10,000 in excess thereof)

*Options are another way to gain commodity exposure but at the same time to limit your downside risk*

## 2b. GSCI Options

<b>Description:</b>	GSCI Options give the purchasing Investor the right but <b>not the obligation</b> to purchase (call option) or sell (put option) the GSCI Index or any individual sub-component of the GSCI at a fixed level in the future. The buyer of the option pays a <b>premium</b> to the seller for the right to exercise the option. All options are composed of a strike price, expiration, the term and premium. GSCI options allow the investor to participate in the upside return of the index with downside protection.
<b>Minimum size:</b>	\$5 million notional
<b>Indicative fee/economics:</b>	No fees to an investor to purchase Options. Pricing will fluctuate with market conditions, most importantly volatility of the underlying index Secondary market liquidity is deeper than for Structured Notes
<b>Term:</b>	Out to 7 years
<b>Documentation:</b>	Purchase of OTC Options from Goldman Sachs require an account with J Aron.
<b>Other:</b>	Options can be customized to provide specific strikes, return profiles/leverage, expiration dates and European, American and Asian style settlement.

### 3. Buying and Rolling the GSCI Futures Contract

*The GSCI futures contract provides an efficient way to replicate the index*

*Liquidity is not impacted by the level of GSCI open interest due to the fact that true liquidity is determined by the underlying 24 futures' markets liquidity.*

#### ■ Implementation Method:

- Buy GSCI futures contract on the Chicago Mercantile Exchange
- Roll forward on 5th to 9th business day of each month, 20% per day
- Manage the underlying cash collateral

#### ■ Comment:

- Perfectly arbitrageable versus the 24 underlying markets.
- Arbitraged by various competitors in the CME pit - resulting in a highly efficient market
- Most-favoured method of implementation by largest asset managers and clients who use futures

*The GSCI futures contract on the CME is the primary investment vehicle that asset managers use to achieve exposure to the GSCI Index*

#### 4. Third Party Asset Managers

- Manage a semi-passive portfolio which will create exposure to commodities through the purchase of GSCI futures contracts traded on the Chicago Mercantile Exchange (CME)
- Actively manage cash in a short-duration fixed income portfolio to create excess return.
- Maintain the production weightings of the commodities in the GSCI so as not to impair its intrinsic inflation hedging characteristic
- Tactically decide to take and manage tracking error in order to reduce transaction costs.
- Periodically, purchase individual commodity contracts in a different month than that represented in the GSCI.

## GSCI Fact Sheet

- The Goldman Sachs Commodity Index (GSCI) is the global benchmark for commodity investments
- The GSCI reflects investment returns from holding and rolling forward a basket of commodity futures
- The design of the GSCI ensures transparency and daily liquidity for large investments
- The history and liquidity of the GSCI is unparalleled, evidenced by over 12 years of trading
- The index methodology is simple & public, no 'black box' – supervised by a Policy Committee
- GSCI investments are cash-settled, no physical delivery!
- All commodity futures included in the GSCI trade on regulated exchanges
- The GSCI is published on newswires, e.g. Reuters and Bloomberg and also in the financial press, e.g. The Wall Street Journal, Financial Times, Handelsblatt
- GSCI investments can be marked-to-market reliably & accurately on a daily basis

# Euromoney Poll Rankings 2003

*Euromoney ranked Goldman Sachs top of all four commodity categories within its annual poll*

## Commodity Risk Management Advice and Value at Risk Appraisal

	Points
1 <sup>st</sup> Goldman Sachs	75
2 <sup>nd</sup> Morgan Stanley	39
3 <sup>rd</sup> Citibank	19
4 <sup>th</sup> Bank of America	17
5 <sup>th</sup> Barclays	16
6 <sup>th</sup> Deutsche Bank	12

## Energy

	Points
1 <sup>st</sup> Goldman Sachs	59
2 <sup>nd</sup> Morgan Stanley	30
3 <sup>rd</sup> Bank of America	21
4 <sup>th</sup> Citibank	16
5 <sup>th</sup> Barclays	13

## Base Metals

	Points
1 <sup>st</sup> Goldman Sachs	20
2 <sup>nd</sup> Morgan Stanley	13
3 <sup>rd</sup> Barclays	10

## Precious Metals

	Points
1 <sup>st</sup> Goldman Sachs	11
=2 <sup>nd</sup> Morgan Stanley	7
=2 <sup>nd</sup> Bank of America	7

*The GSCI is the premier benchmark for investment in the commodity markets.*

*The GSCI has over 13 years of trading history.*

## Summary

- Goldman Sachs recommends a permanent, strategic allocation to commodities as a 'separate asset class' to hedge macroeconomic risk, decrease expected portfolio risk and enhance expected portfolio returns.
- The GSCI historically has provided its best returns when your portfolio needs diversification most - i.e., during 'Hostile Markets', when the standard balanced portfolio generates its worst returns.
- Tactically, the outlook for commodities is secularly bullish, especially given the capacity constraints caused by the significant under-investment in commodity infrastructure.
- There are numerous investment vehicles that provide exposure to the GSCI
- The GSCI is a publicly available index and freely licensed to all market participants. The GSCI has a futures contract listed on the CME making it a truly public and non-proprietary index that has been traded by numerous market makers for over 13 years.

***Worldwide, clients are increasingly making significant portfolio allocations to commodities via the GSCI***

## *Appendix A: Liquidity*



## Commodities are Liquid

### ■ LIQUID MARKETS WITH THE POTENTIAL FOR GROWTH

- The futures open interest of the underlying commodity markets is in excess of \$170 billion.
- The total size of the underlying markets is a multiple of this number if the over-the-counter market is included.
- The potential size of the underlying markets is over 1 trillion USD annually, if all commodity production was fully hedged.

### ■ TOTAL GSCI OPEN INTEREST IS A MERE FRACTION OF TRADED VOLUMES

- The true liquidity of the GSCI should be assessed by looking at the size of the underlying markets.
- Hence the Open Interest of the GSCI futures contract significantly understates the true liquidity of the GSCI.

### ■ GSCI OPEN INTEREST

- The GSCI is fully arbitragable with the underlying commodities.
- GSCI open interest fluctuates as market views fluctuate. Liquidity is not impacted by the level of GSCI open interest due to the fact that true liquidity is determined by the underlying markets liquidity.
- GSCI open interest has exceeded \$ 2.4 billion (45,000 contracts).
- GSCI open interest is currently \$1.2B yet that does not reflect a drop in liquidity.

## Commodities are Liquid

### ■ EXCELLENT LIQUIDITY FOR SIZE TRADES

- In normal market conditions, one could comfortably execute \$200 million on a daily basis without a material impact on prices in GSCI futures or in the swap market.
- With good market liquidity, \$500 million could be executed within one business day, implementing either way.

### ■ IMPLEMENTATION DURING THE TRADING DAY

- To enhance liquidity, we would recommend entering the market during the day when all 24 underlying commodity markets are open.

### ■ NUMEROUS MARKET PARTICIPANTS ADD TO LIQUIDITY

- When the GSCI was created, it was deliberately structured to maximise both liquidity and investability.
- There are a number of market participants in addition to Goldman Sachs who arbitrage the GSCI futures contract versus its underlying components in the pit at the Chicago Mercantile Exchange adding to the liquidity.

48  
88

## GSCI Futures Open Interest is Not Representative of GSCI Liquidity

Calculation as of  
31 May 2004.

The GSCI futures contract can be perfectly arbitrated versus the underlying markets. Thus, the true

liquidity of the GSCI Futures Contract is the liquidity of the underlying markets.

There is over \$170 billion of open interest in the underlying futures markets. Moreover, there is much more liquidity if you include the OTC market.

You access all of this liquidity when trading the GSCI futures contract, as well as GSCI OTC swaps.

	Open Interest (Thousand Contracts)	Open Interest in Dollars (Billion \$)
<b>Energy</b>		
Crude Oil	718.0	28.6
Brent	338.2	12.4
Heating Oil	159.6	6.7
Gas Oil	171.2	5.4
Unleaded Gas	136.2	8.2
Natural Gas	375.1	24.2
<b>Industrial Metals</b>		
Aluminum	406.6	17.1
Copper	156.0	11.0
Zinc	139.3	3.8
Nickel	37.1	2.7
Lead	49.2	1.1
<b>Precious Metals</b>		
Gold	234.6	9.2
Silver	85.7	2.6
<b>Agricultural</b>		
Corn	630.3	9.6
Soybeans	201.0	8.2
Cotton	81.3	2.5
Wheat	123.7	2.2
Kansas Wheat	56.4	1.1
Sugar	273.0	2.2
Cocoa	107.1	1.6
Coffee	108.6	3.5
<b>Livestock</b>		
Live Cattle	128.3	4.5
Live Hogs	83.3	2.5
Feeder Cattle	15.2	0.7
<b>Total</b>		<b>171.6</b>
<b>GSCI Open Interest</b>	<b>16.15</b>	
<b>GSCI OI as a % of Underlying Open Interest</b>		<b>1.22%</b>
		<b>0.71%</b>

GSCI Open Interest is less than 1% (0.71%) of the Underlying Commodity Futures Open Interest. You access all of this liquidity when trading the GSCI futures contract, as well as GSCI OTC swaps.

Source: Goldman Sachs 58

## ***Appendix B: The Case For Long Run Returns***

490

## Why Commodities Should Generate Long Run Returns: The Keynes Argument

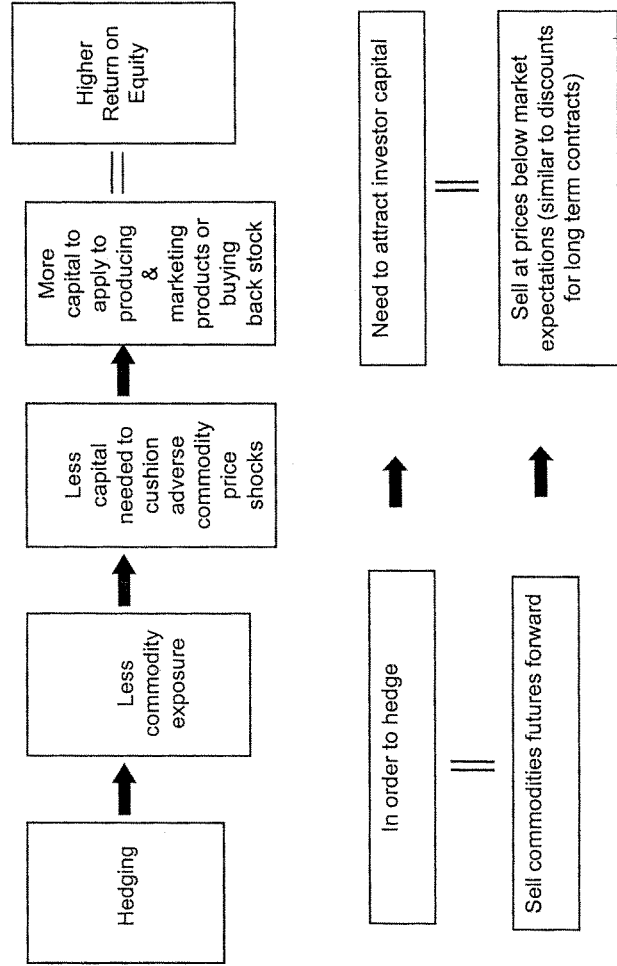
The Future of Commodity Returns Does Not Depend on the Long-term Outlook for Commodity Prices.

Commodity Returns are Based on Real Economics and Depend on the Balance Between Supply and Demand for Risk Capital in the Commodity Markets.

### Investor Capital in Financial and Commodity Markets

- Investors providing capital to equity and fixed income markets are providing capital for ongoing operations of a particular enterprise and returns are generated by the ongoing viability of that enterprise.
- Investors in commodity markets do not directly provide capital to the commodity producers.
- Instead, the investors long positions in commodity futures allows the producing firms to externalise their short-term commodity price risk via hedging (ie. The commodity producers take the short side of the futures). This hedging activity allows the producers to better utilise their existing capital.
- Commodity hedging is key to the commodity producers business by allowing the firm to separate its business risk - the ability to produce at low cost and market desirable products (the core function of equity risk-capital) from its commodity price risk.

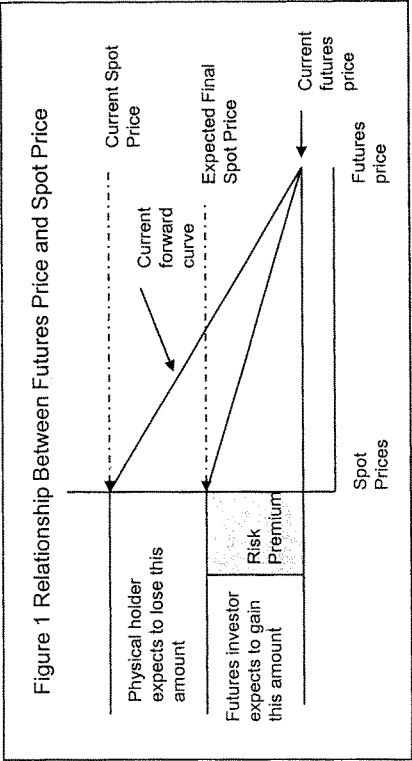
## Economic Basis for Long Run Returns 1



Economic Basis for Long Run Returns 2

Long-run returns from commodity investing  $\neq$  Long-term commodity price trends

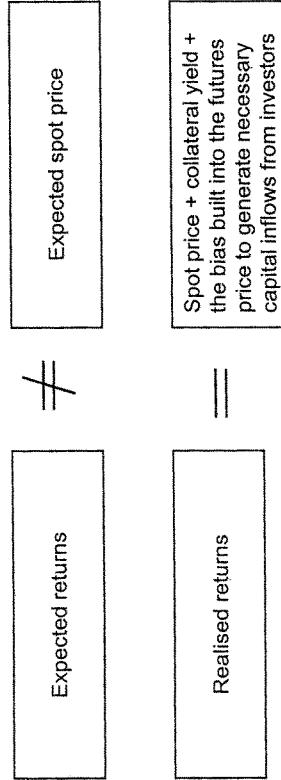
Even when the spot price is expected to fall, the futures investor still expects a positive return.



Long run returns  $=$  Balance between demand and supply of risk capital

## Historical Long Run Returns

*Spot price changes have no predictive power for the total return on a commodity futures investment.*





## Future for Long Run Returns

Outlook for returns on commodity investing	$\neq$	Outlook for commodity prices
Outlook for returns on commodity investing	$=$	Supply and demand for risk capital in commodity markets

## Balance Between Supply and Demand for Risk Capital in the Commodity Markets is Shifting Towards the Investor

### Demand for Capital is Rising

- Commodity producers are managing their balance sheets more aggressively i.e. minimising equity and using more debt and thus needing to hedge more.
- Increased privatisations have increased the number of producers needing risk capital
- The market share of emerging market producers is growing. These producers with their higher capital costs are driven to hedge more and are willing to pay more to attract capital because they save more in terms of overall capital costs as they reduce the level of equity reserves.

### Supply of Capital is Declining

- Reduced willingness of consumers to bear unnecessary balance sheet risk of fixed-price long-term contracts.(i.e., increased global competition and ease of entry of new competition has made locking in costs progressively less attractive.)
- Governments withdrawing capital
  - Reducing subsidies to money-losing industries
  - Eliminating government price support programs in agriculture
  - Privatising government-owned enterprises (thereby increasing their need to raise capital against risk)

65

## Disclaimer

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August 25, 2009

Permanent Subcommittee on Investigations  
United States Senate  
199 Senate Russell Office Building  
Washington, DC 20510

Dear Chairman Levin and Ranking Member Coburn:

Detailed below are CME Group's responses to the questions posed on July 31, by the Permanent Subcommittee on Investigations in follow-up to the Subcommittee's hearing on "Excessive Speculation in the Wheat Market." We thank you again for the opportunity to testify at the hearing and express CME Group's views of the related PSI report, and continue to be happy to provide the Subcommittee with relevant information.

1. **Derivative Dealers.** *Please provide the total number of derivative dealers now authorized to trade on a CME operated commodity futures exchange. Please provide the names of these derivative dealers or explain why their identities cannot be disclosed*

There are currently 49 accounts identified as derivative dealers that carry reportable open positions in one or more commodities traded on CME Group exchanges. We are unable to provide the Subcommittee with the names of these dealers. That information is being withheld on the grounds that it is confidential in nature in that it reflects positions and names of customers in our market which cannot be publicly disclosed.

2. **GAO Report.** *In its prepared statement for the hearing, CME states that a report issued by the Government Accountability Office (GAO) did not find evidence that index traders, in the aggregate, affected price or market performance. In a June 24 press statement commenting on the Subcommittee's report, CME stated that the GAO report "used in-depth market data to analyze how changes in positions of index funds and other market participants are related to prices changes," and concluded that "there is no causality between market participation of index funds and non-commercial traders and what price levels or cash market convergence at expiration."*

- a. *Is CME relying on "Issues Involving the Use of the Futures Markets to Invest in Commodity Indexes," No. GAO-09-285R?*

Permanent Subcommittee on Investigation <b>EXHIBIT #8</b>
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- b. *Is CME aware that this 35-page report consists primarily of a 6-page letter followed by a collection of slides summarizing how commodity index futures trading is addressed by various laws and regulations*
- c. *Is CME aware that GAO did not perform any of its own analysis of the causal relationship between commodity index trading and commodity prices, and did not present any of its own conclusions on that issue in its report?*

CME Group Response:

- a. Yes, this is the study our testimony refers to.
- b. Yes, we are aware that the GAO study includes a six page letter followed by a collection of slides. However, we are also aware that the GAO study reviewed eight empirical studies and three qualitative studies "...analyzing the impact that index traders and other futures speculators have had on commodity prices". According to the GAO review, the eight empirical studies found "...limited statistical evidence of a causal relationship between speculation in the futures markets and changes in commodity prices—regardless of whether the studies focused on index traders, specifically, or speculators generally". The GAO report also noted that "...all of the empirical studies we reviewed generally employed statistical techniques that were designed to detect a very weak or even spurious causal relationship between futures speculators and commodity prices. As a result, the fact that the studies generally did not find statistical evidence of such a relationship appears to suggest that such trading is not significantly affecting commodity prices at the weekly or daily frequency".
- c. Yes, we are aware that GAO did not perform its own analysis of the causal relationship between commodity index trading and commodity prices. However, as noted in the answer to part b. above, the GAO did state that the results of the empirical studies it reviewed "...appears to suggest that such trading is not significantly affecting commodity prices at the weekly or daily frequency".

- 3. ***Informa Report.*** *In its prepared statement, CME states that an "independent" report prepared by Informa does not "support the conclusion that index traders or swap dealer participation in our markets was a cause of volatility, high commodity prices or lack of convergence." Did CME provide any direct or indirect funding for this report?*

CME Group provided partial funding for the Informa Report referenced in our prepared statement along with ICE U.S., New York Mercantile Exchange, Kansas City Board of Trade and Minneapolis Grain Exchange. The funding that was provided was to cover Informa's costs for conducting the study, and the Exchanges had no other role in conducting the study other than to provide Informa with the overall objective of the analysis and market data for each respective Exchange.

Informa Economics, Inc. (formerly known as Sparks Companies, Inc.) is a world leader in broad-based domestic and international agricultural and commodity/product market research, analysis, evaluation and consulting. The company was founded in 1977 and, in 2003, was acquired by Informa plc ("Informa") as part of its AGRA division. Informa Economics, Inc. serves hundreds of firms, institutions and trade organizations worldwide from its headquarters in Memphis, Tennessee. The Informa Economics team has extensive experience in worldwide agribusiness and agricultural policy decision-making. Many Informa Economics employees have gained insights from past government service in senior policy, analysis and advisory positions; from major trade associations; from land grant universities; and as senior officials of leading agribusiness companies.

4. **Minneapolis Grain Exchange Cash Index Data.** *In its prepared statement, CME criticizes use of Minneapolis Grain Exchange (MGEX) cash index data in the staff report released by the Subcommittee, Excessive Speculation in the Wheat Market ("wheat report"), to identify cash prices for wheat over time. The CME statement says that use of the MGEX cash index data "demonstrates a gross misunderstanding of delivery market economics where futures price the cheapest to deliver location/grade and not multiple locations throughout the entire U.S." The MGEX cash index price is a national average of cash prices on a specific day offered for the immediate sale of soft red winter wheat from over 500 country elevators in the primary growing locations. Another source of public data on wheat cash prices is USDA daily price data which, for the Chicago area, reflects only a few transactions each day and sometimes none on a particular date, making it less reliable and less reflective of cash prices across the country compared to MGEX cash index pricing data. The wheat report presents one chart using the MGEX data to present and average daily basis for Chicago wheat prices and another chart using the USDA daily price data for Chicago to present basis data on wheat futures contract expiration dates. Both charts show that wheat cash and futures prices failed to converge over the last few years in the Chicago market. Are you aware of wheat pricing data that would have shown significant price convergence in the Chicago market in recent years?*

The Minneapolis Grain Exchange (MGEX) soft red winter cash index is, in our opinion, a poor benchmark from which to measure convergence. First, the MGEX cash index is not a national average of cash prices on a specific day offered for the immediate sale of soft red winter wheat. Instead, the MGEX cash index represents an average of elevator bids (not offers) that do not represent transaction prices, just like the USDA reported Chicago price series does not represent transaction prices. Thus, any cash price series based on cash bids will necessarily result in a weaker basis than actually exists. This is true whether one uses MGEX indices or USDA indices.

The main reason the MGEX cash index is inappropriate to measure convergence is because it is too broad, representing over 500 reporting stations. The delivery points for the Chicago Board of Trade (CBOT) Wheat contract during the period analyzed in the PSI report included Chicago, Toledo and St. Louis. Therefore, futures prices are not expected to converge to a national average cash price but to the cheapest delivery point.

As you know, soft red winter wheat is produced in multiple locations throughout the eastern and central U.S. The most common sale points for producers are country elevators located near production areas. This is the first point of marketing channel from where the wheat is produced to where it will ultimately be consumed, processed, or exported. Because wheat is bulky and expensive to transport, it becomes more valuable as it moves from production areas to where it is consumed/used. The Chicago Board of Trade Wheat futures contract over the study period uses three delivery locations: Chicago, Toledo, and St. Louis. All of these locations represent processing, transportation, or terminal storage markets. Thus, the value of wheat in these locations is much higher than the value of wheat in an index made up predominately of bids from country elevators far from these terminal markets. The basis should appreciate going into futures expiration when measured using the MGEX cash index; however, delivery equivalence between the MGEX cash index and the CBOT Wheat futures contract at expirations will not occur and should not be expected to occur since the MGEX index does not represent wheat stored at or near (within 50 miles) a delivery point.

Further, with three delivery locations, it is only necessary for convergence to occur at one of these locations. In an ideal futures contract, only one delivery location would be specified. In reality, however, additional locations are typically needed to assure sufficient deliverable supply and guard against concentration in the delivery market. With multiple delivery locations one will represent the location that is the cheapest for the seller to deliver, and the futures market will price that location. Suppose the cheapest to deliver location is Toledo, OH. The CBOT Wheat futures contract will represent expected wheat prices in Toledo, and the multitude of market participants can count on the futures market having this stabilizing underlying market; their pricing will be in relation to one location – Toledo. With a broad cash index, each day the index will typically be weighted to a changing underlying base. For example, wheat harvest begins in the South and moves north. One would expect a nationwide wheat index to more closely represent Southern wheat while it's being harvested and have that representation move north with the advancing harvest because more elevators are likely to have and report relevant bids during harvest rather than before harvest. A futures contract trying to reflect the future value of this broad index would force wheat merchants that use this contract as a price benchmark to relate their prices to a moving target rather than a single location – Toledo.

For full futures contract performance in this scenario, the Toledo price and the CBOT Wheat futures price would converge at futures expiration. Thus, the correct markets to examine convergence are the delivery locations – Toledo, Chicago, and/or St. Louis. It is important to realize, additionally, that successful convergence does not necessarily mean a zero basis at delivery. Instead, convergence means basis appreciation to some reliable range at delivery.<sup>1</sup>

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<sup>1</sup> The only publicly available data for measuring convergence are cash bids from grain merchandisers with facilities located at the contract delivery locations. In deciding whether to make delivery or sell wheat in the cash market, the delivery warehouseman compares the price at which he can sell wheat in the cash market (his offer price) versus the futures price since that represents the price he would receive for making delivery. The difference between the bid and the offer is not publicly available, however, anecdotal data suggest this spread may be as wide as \$0.20-\$0.30 per bushel since it represents the warehouseman's cost for handling the grain and his profit margin. Therefore,

Convergence at the cheapest-to-deliver location is important and has not been occurring consistently due to limited delivery capacity and an extremely large 2008 soft red winter wheat crop that resulted in significant discounts in the cash price (i.e., weak basis) in order to secure storage space. With the changes in delivery locations implemented with the July 2009 expiration, delivery capacity more than doubled from approximately 70 million bushels to approximately 160 million bushels. As a result, basis appreciation is occurring, with the Toledo basis strengthening over \$1.20 per bushel since September 2008. Also, prior to the 2008 harvest when the market experienced more normal levels of soft red winter supplies, the December 2007 and March 2008 contracts demonstrated excellent convergence with the basis at \$0.15 per bushel under December 2007 futures on first notice day for the December 2007 expiration and 11.5 cents per bushel under the March 2008 contract on its first notice day.

6. ***Index Trading Revenues.*** *The exchanges operated by the CME Group typically charge transactions and clearing fees for trades executed on those exchanges or through their clearinghouses. For the three year period, 2006 through 2008, please estimate the total amount of gross revenues earned from commodity index trades by the CME exchanges from transaction and clearing fees, and the percentage that those revenues represent compared to the gross revenues earned from all transaction and clearing fees paid during that same three-year period.*

We have compiled internal estimates of all commodity index trading volume and the CME Group transaction and clearing fee revenue generated from this activity. As a percentage of gross revenues earned from transaction and clearing fees at CME Group, index trading revenues are estimated at 1.35% in 2006, 1.55% in 2007 and 2.13% in 2008. Index fund activity in wheat futures and options is estimated at 0.07% of total gross CME Group transaction and clearing fee revenues in 2006, 0.06% in 2007 and 0.06% in 2008.

If you have any questions regarding the information provided here or require additional information, please contact Anne Klein Gray or Bo Chambliss in our Washington, D.C. office at 202-638-3838.

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convergence between futures prices and cash bids may actually occur at \$0.20 - \$0.30 under futures since that would represent an equivalent value for delivering against a short futures position versus selling in the cash market.



RESPONSES TO SUPPLEMENTAL QUESTIONS FOR THE RECORD  
FROM  
PERMANENT SUBCOMMITTEE ON INVESTIGATIONS

to  
**STEVEN H. STRONGIN**  
Head of the Global Investment Research Division  
The Goldman Sachs Group, Inc.

PERMANENT SUBCOMMITTEE ON INVESTIGATIONS  
HEARING ON  
**EXCESSIVE SPECULATION IN THE WHEAT MARKET**  
July 21, 2009

- 1) ***26,000 Limit.*** *In 1991, Goldman Sachs became the first derivatives dealer to obtain a hedge exemption from the CFTC allowing it to exceed standard position limits to offset financial risks from selling commodity index swaps to clients. At that time, with respect to wheat, instead of the 6,500 standard position limit, the CFTC authorized your firm to hold up to 26,000 wheat futures contracts at a time.*
- a) *How was the 26,000 limit arrived at?*
  - b) *Since 1991, how many times, if any, has Goldman Sachs exceeded the 26,000 limit?*
  - c) *During 2007 and 2008, approximately how many times, if any, did the total number of wheat futures contracts held by Goldman Sachs exceed 20,000?*
  - d) *How many different trading units within Goldman Sachs are subject to the 26,000 limit, and how does Goldman Sachs ensure that those trading units do not, in aggregate, exceed the 26,000 limit?*
  - e) *For each of the years 2007 and 2008, please break down the percentages of total wheat futures contracts purchased by Goldman Sachs for its own proprietary accounts, its affiliates, and clients.*

In 1991 the CFTC, with the concurrence of each of the sitting Commissioners, responded to a request filed by J. Aron & Company ("J. Aron") by recognizing that transactions and positions in futures contracts on corn, wheat and soybeans entered into to offset price risks resulting from swap transactions constituted "bona fide hedging transactions." CFTC Rule 1.3(z)(3) provided that the Commission had the authority to recognize as bona fide hedges transactions other than those enumerated in Rule 1.3(z)(2) in accordance of CFTC Rule 1.47. The latter rule provides that a entity wishing to avail itself of the provisions of Rule 1.3(z)(3) must file a statement with the CFTC describing the futures transactions contemplated and setting forth in detail information that demonstrates that the purchases and sales of such futures are economically appropriate to the reduction of risk exposure attendant to the conduct and management of a commercial enterprise.

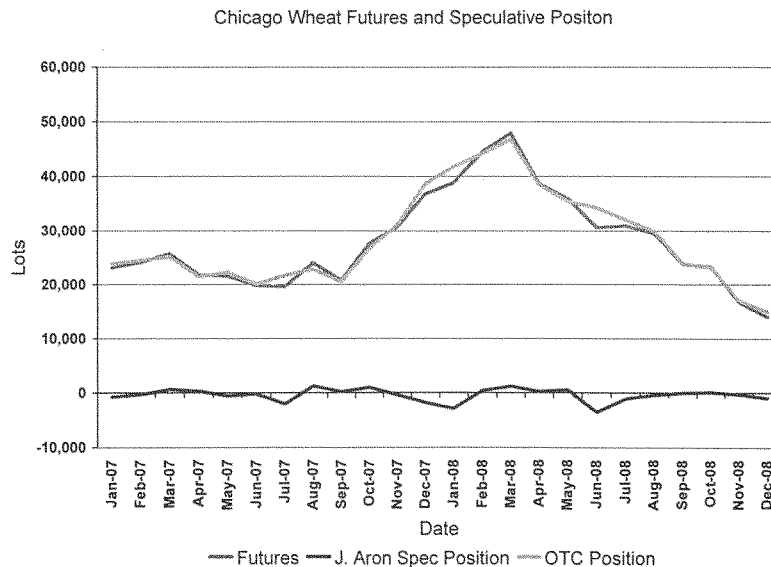
The original authorization that was provided by the CFTC related to a single commodity swap transaction on the newly created Goldman Sachs Commodity Index in a notional

amount of \$100 million. Accordingly, the original exemption related to 411 wheat contracts. The hedge exemption was increased over the years reflecting an increase in swap commitments which J. Aron sought to hedge using futures. In 2005, J. Aron's hedge exemption was increased from 22,400 lots to 53,300 lots, the current level of the exemption.

The applicant for and recipient of the hedge exemptions was J. Aron, the legal entity through which Goldman Sachs conducts the vast majority of its commodities activities. All entities with Goldman Sachs covered by the same CFTC number as J. Aron are subject to the hedge exemption to the extent they have offsetting financial risk. The hedge exemption may be utilized only up to the lower of offsetting financial risk or 53,300 lots. Although we have not maintained detailed records reflecting hedge exemption exceptions, we do monitor compliance hedge exemption limits through futures position reports which are reviewed on a daily basis by compliance and trading supervisors. Further, we are not aware of any circumstance in which J. Aron has exceeded a limit without having obtained a temporary increase in hedge exemption to accommodate such an increase in position.

J. Aron enters into derivatives transactions as a principal with our clients and other counterparties, such as dealers. J. Aron hedges the risks arising from such transactions through other derivatives and futures transactions. In all cases, J. Aron is a principal.

The chart below shows the J. Aron Chicago Wheat futures position, the futures held as a financial hedge and the J. Aron Speculative position. As shown in the chart, the speculative position of J. Aron is variable and small relative to the futures position held as an intermediary.



- 2) **Index Trading.** *The CME Group said in its prepared statement that, in the Chicago wheat futures market, from 2006 to the present, "the percentage of long open interest held by commodity index traders fluctuated between 51.8% reached January 17, 2006 and 32% reached on October 24, 2006. The most recent data for July 7, 2009 indicates the percentage to be 46.4%." The report, Excessive Speculation in the Wheat Market, released by the Subcommittee states that, "from 2006 through 2008, index traders held between 35 and 50% of the outstanding wheat contracts (long open interest) on the Chicago exchange," and their 2008 share was "between 40 and 45% of the long open interest." In contrast, your prepared testimony states: "In the Chicago Wheat market, commodity index investors hold 22% of the total long plus short position, while speculators hold 52% and commercial participants 26%." Please explain the contrast between the figure of 22% used in your prepared statement, compared to the 46% in the CME statement and the 40 to 45% in the wheat report.*

We examine the share of total positions -- both long and short, which is twice open interest -- as opposed to the share of open interest (note that the "shares" of open interest would not add to one). The subcommittee is looking at the share of long open interest only, while we are looking at total long and short positions. Because index investors are typically long only, their share of long positions would be roughly 2x the size of the number we quote, which is why the numbers quoted by the Committee and the CME are about 2x the size of our 22% number.

- 3) **Client-Specific Position Limits.** *At the hearing, Goldman Sachs recommended that the 6,500 standard position limit for wheat futures contracts be applied, not to derivative dealers engaging in commodity index trades, but to their clients.*
- a) *Please explain why client-specific position limits would be a better approach.*
  - b) *Please estimate how many clients would be affected.*
  - c) *For more than a year, in response to a special call from the CFTC, Goldman Sachs has been supplying client-specific trading data to the CFTC. Please indicate how often you supply that data, whether the data is provided in a required format, whether you provide actual or estimated trading data, and whether supplying that data has been overly burdensome.*
  - d) *Please indicate whether the client-specific trading data you have been supplying to the CFTC could readily be used to place, track, and enforce position limits on those clients.*

We believe that swap dealers provide liquidity and serve an important role in price discovery, and that they provide customized risk management products to a range of companies and organizations. We also believe that to the extent the swap dealer enters into a derivative with a client and hedges its risk using futures transactions, it is the client rather than the dealer that has a beneficial interest in a position that is long or short, as the

case may be. The swap dealer is acting as a financial intermediary insofar as its derivative position is offset by a position in futures. It is true that in entering into the derivative transaction the swap dealer is assuming certain risks that may not be readily managed through futures. Nevertheless, the true “demand” for the futures resides with the swap dealer’s client. As such, we believe that any limit should apply to the client by looking through the swap dealer.

Of course, the need for hedge exemptions stems from the fact that CFTC position limit authority is focused on futures contracts while dealers manage their trading books on an aggregated net risk basis across futures and derivatives. As such, if the CFTC had authority to establish limits across derivatives as well as futures we believe that it would be unlikely that hedge exemptions would be necessary. Finally, to the extent that a swap dealer is not acting as a financial intermediary it is, of course, subject to the same position limits as any other market participant.

Goldman Sachs has over two thousand OTC Commodities clients. Based on a review of the previous three CFTC Special Call submissions, no clients have held an OTC wheat position equivalent to 6,500 lots or greater.

Goldman Sachs submits its CFTC Special Call filing on a monthly basis. The Special Call file contains actual trading data in a format that has been provided by the CFTC. Goldman Sachs, together with other dealers, worked with the CFTC staff to ensure that the information that we provide conforms to the staff’s expectations and meets their requirements. We do not consider this filing to be burdensome. We also believe that the information provided by dealers in response to the special call may be used readily to place, track and enforce position limits on end-user clients.

RESPONSES TO SUPPLEMENTAL QUESTIONS FOR THE RECORD  
FROM  
PERMANENT SUBCOMMITTEE ON INVESTIGATIONS  
to  
**MARK COOPER**  
Director of Research  
Consumer Federation of America

PERMANENT SUBCOMMITTEE ON INVESTIGATIONS  
HEARING ON  
***EXCESSIVE SPECULATION IN THE WHEAT MARKET***  
July 21, 2009

1. **Data Correlations.** At the hearing, you testified that when derivative dealers bought wheat futures to help offset the commodity index swaps they had sold to clients, the gap between wheat futures and cash prices (the basis) increased in the Chicago market, and when those derivative dealers exited the wheat market, that gap appears to have declined. Here is what you said in part:

"[W]hen you buy a futures contract, as you have heard, you influence the price. ... These financial investors behave according to a financial logic which treats commodity futures as assets, not resources. They pay less attention to the fundamentals of the real economy and more attention to financial formulas. Index traders just kept pouring money in and adjusting their portfolios according to the logic of their index managers. When regulators finally threatened oversight and when general liquidity in the economy dried up, the financial investors vacated the market. And lo and behold the aberrations declined, as you have seen. Near-perfect correlation like this, with perfect correlation on the way up and perfect correlation on the way down, is very rare and very persuasive."

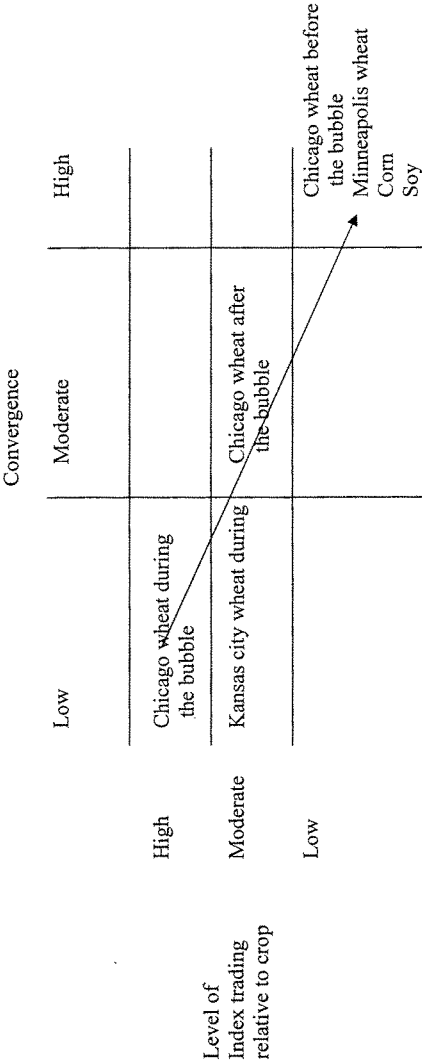
Can you please explain what you meant by the correlations referenced in your testimony?

2. **Lack of Price Convergence at Expiration.** The staff report released by the Subcommittee, *Excessive Speculation in the Wheat Market*, includes data comparing wheat futures prices with wheat cash prices in the Chicago area on the date of contract expiration, and found that the average price gap (the basis) was 13 cents in 2005, 34 cents in 2006, 60 cents in 2007, and \$1.53 in 2008. The CFTC's prepared statement contains similar data comparing the Chicago wheat futures price and the wheat cash price in Toledo on the date of contract expiration, with the price gap (the basis) increasing from 5 cents in 2005, to 47 cents in 2006, 24 cents in 2007, and \$1.07 in 2008. In addition, the CFTC's prepared statement reports that when the July 2009 futures contract expired, the price gap between the Chicago wheat futures price and the wheat cash price in Toledo on that date was 83 cents. How does this data relate to your analysis?

**MR. COOPER'S RESPONSE TO QUESTIONS 1 AND 2:**

Combining statements at the hearing with the data in the report on *Excessive Speculation in the Wheat Market* I can construct the following table which correlates index trading and convergence. The evidence presented to the committee on the relationship between index trading and convergence across various markets, at various times for several crops establishes a strong basis for concluding that the lower the level of index trading relative to the size of the crop, the higher the level of convergence. There is an inverse correlation between index trading and convergence. The testimony also provides the other elements necessary to establish a causal relationship. There is change, difference and temporal sequence included in the table. A clear theoretical explanation was offered as well, "Fifty percent of the open interest – 56 percent of the actual flat price... is held by somebody that will not respond to short term economics." (Testimony of Thomas Coyle in response to questioning by Sen. Coburn).

THE RELATIONSHIP BETWEEN INDEX TRADING AND CONVERGENCES



**Responses of Gary Gensler**  
**Chairman, U.S. Commodity Futures Trading Commission**  
**Questions for the Hearing on Excessive Speculation in the Wheat Markets**  
**U.S. Senate Permanent Subcommittee on Investigations**  
**July 21, 2009**

1. **Derivative Dealers.** Please provide the total number of derivative dealers now authorized to trade on commodity futures exchanges. Please provide the names of these derivative dealers or explain why their identities cannot be disclosed.

***RESPONSE:** Derivative dealers, often referred to as swaps dealers, do not need authorization from the Commodity Futures Trading Commission (CFTC or Commission) to trade on commodity futures exchanges. Nevertheless, like all significant futures market participants their trading activities are subject to CFTC oversight -- notably the Commission's surveillance and large trader reporting system. While the Commodity Exchange Act (CEA) prohibits the Commission from making public the identities of individual traders and their positions, the Commission does publish non-identifying aggregate information on large traders on a weekly basis as the Commitment of Traders (COT) Report. On September 4, 2009, in order to improve market transparency to the public, the Commission expanded that report (the Dis-aggregated COT Report) to include information specifically on swaps dealers. For instance, on October 31, 2009 that report stated that as of October 27, 2009, 19 swaps dealers were long 148,294 contracts of CBOT wheat futures and options on futures combined (FOC), which was 33.5% of the open interest in that contract. Similarly, 10 swaps dealers were short 16,865 contracts of CBOT wheat FOC, which was 3.8% of the open interest. Swaps dealers held 20,512 CBOT wheat (FOC) spread contracts as well. This information is available for 22 futures contracts for agriculture, energy, and metal contracts.*

*In addition to the regular COT Report and the new Disaggregated Report, the Commission publishes Quarterly Index Investment reports. In June of 2008, Commission staff initiated a special call to futures traders which included 43 requests to 32 entities and sub-entities. These entities included swap dealers engaged in commodity index business, other large swap dealers, and commodity index funds. That report for September 30, 2008, showed that the respondents had a net long futures equivalent position of 160,000 contracts in CBOT Wheat. That data indicated that 43 respondents had 280 clients of which 29 were in CBOT Wheat. On September 30, 2009, that report indicated that the 43 respondents held a net long futures equivalent position of 183,000 contracts of CBOT Wheat. Early indications of that information show that 43 respondents of the special call had 263 clients, of which 31 held positions in CBOT Wheat. Staff continues to analyze this data.*

*The Commission's two Commitments of Traders Reports and the Quarterly Index Investment report are limited to the 22 and 19 markets (respectively) in agriculture, energy, and metals. These markets on physical commodities are a small part of the OTC derivatives market which is dominated by swaps on interest rates and foreign currencies. For example, the Office of the Comptroller of the Currency (OCC), which charters, regulates, and supervises*



*all national banks, publishes quarterly reports based on their Call Report information. Banks participate in OTC derivatives markets both as dealers and as end users. The OCC's Call Report indicates that 1,110 insured US Commercial Banks reported derivatives activity in the second quarter of 2009 yet "5 large commercial banks represent 97% of total banking industry notional amounts" ... In the June 2009 report, the OCC shows that the top 25 commercial banks and trust companies have approximately \$7.3 trillion dollars of exchange traded derivatives business, which is only 3.6 % of those banks' total derivatives business. By comparison, those same banks have \$195.7 trillion of OTC derivatives business, the majority of which is held in interest rate contracts, \$171.5 trillion.*

2. **Exemptions and Waivers.** At the request of the Subcommittee as part of its investigation, the CFTC provided data on the exemptions and waivers it had granted to derivative dealers in the Chicago wheat futures market. The CFTC indicated that it had granted exemptions to four derivative dealers selling commodity index swaps and provided no action letters granting waivers to two fund managers which, altogether, allowed these 6 entities to hold up to 130,000 wheat futures contracts instead of the 39,000 allowed if the standard limit of 6,500 futures had applied.

In its prepared statement, CME Group stated that it had granted a much larger number of exemptions, allowing 17 commodity index traders to hold a total of up to 413,145 wheat futures contracts at a time. CME also stated:

"Prior to being approved by the CME, all index traders were required to receive prior CFTC approval. The CME did not grant any exemptions to index traders that the CFTC had not already granted."

When asked about this difference at the hearing, you indicated that CME might have counted all exemptions, not just those for index traders, but CME's statement indicates that its data applies solely to commodity index traders. Please explain why these two sets of numbers are so different, and provide what the CFTC considers to be the most accurate and comprehensive data on the total number of derivative dealers that have received an exemption or waiver from the standard position limit on wheat futures due to commodity index trading, the maximum number of wheat futures that each is allowed to hold, the date when the exemption or waiver was granted, and the name of each such derivatives dealer or an explanation of why their identities cannot be disclosed.

RESPONSE: *Some dealers participate in OTC swaps that are not related to or derived from indexes. Those dealers would be swap dealers but not index traders. The totals may not agree based on differences in the subset of participants and on the date exemptions are surveyed.*

*As of July 21, 2009, the CFTC had 17 Derivative Dealer (Swaps and Index trader) CBT wheat exemptions on file for a combined total of 396,645 contracts. One dealer is no longer trading and one was acquired by another, so again, the exact number of exemptions and the derivative dealer total wheat exemptions changes over time.*

*The Commodity Exchange Act (CEA) prohibits the Commission from making public the identities of individual traders and their positions.*

3. **Hedge Exemption Review.** The CFTC has initiated a review of the hedge exemptions that it has granted to derivative dealers allowing them to exceed standard position limits to offset financial risks related to commodity trading.

- a. Will this review include an examination of not only hedge exemptions, but also waivers granted by the CFTC through no action letters?

*RESPONSE: On August 19, 2009 the Commission announced that it was withdrawing the two no-action letters granting relief from federal speculative position limits on soybeans, corn and wheat contracts to commodity pool operators pursuing commodity index investment strategies.*

- b. When do you expect the CFTC to conclude this review?

*RESPONSE: This Fall.*

- c. Does the CFTC intend to assemble comprehensive information on the exemptions and waivers that have been granted to derivative dealers, and the position limits now in place at each derivative dealer for each type of commodity? If so, would you provide that data to this Subcommittee?

*RESPONSE: Redacted copies of hedge exemptions for derivatives dealers have been provided to the subcommittee. Once the Commission's review of hedge exemptions is complete, I will be happy to share the results of that review with the subcommittee.*

4. **Client-Specific Position Limits.** At the hearing, Goldman Sachs suggested that if the 6,500 contract limit for wheat were reinstated for commodity index traders, the limit should be placed, not on the derivative dealers, but on their clients, such as clients who have purchased commodity index swaps or shares in commodity index exchange traded funds or notes.

- a. If the position limits were applied to the clients instead of the derivative dealers, what is your estimate of how many clients would be affected?

*RESPONSE: The CFTC's surveillance system is set up to oversee large traders on futures markets. This includes Futures Commission Merchants and their customers. Those customers would include swaps dealers and Exchange Traded Funds (ETFs). However, the clients of swaps dealers and the shareholders of ETFs generally do not hold futures positions themselves. The Commission's information about such parties is limited. However, the Commission is collecting information about investments in index funds through its special call procedure and received testimony this summer from a*

*variety of parties on the subject of position limits in futures contracts for physical commodities. The Commission's Staff Report on Swap Dealers and Index Traders of September 2008 showed that a total of 7 clients (one of which was a commercial) would have exceeded either the single-month or the all-months-combined speculative position limit specifically in CBOT wheat futures when their on-exchange positions were combined with their OTC positions on a futures equivalent basis. Due to resource limitations, the Commission has not prepared an update to that data. To the best of the Commission's knowledge, it is representative of the current situation.*

*This summer the CFTC held three hearings on whether federal position limits should be set by the CFTC for commodities of finite supply. One of the witnesses, Mr. John Hyland of United States Commodity Funds, testified regarding ETFs. His firm has two ETFs; the United Oil Fund and the United States Natural Gas Fund. Shares in these ETFs are sold to the public and the proceeds are then used to buy futures contracts on crude oil and natural gas. Mr. Hyland estimated that these two ETFs had a total of more than 600,000 shareholders.*

- b. Does the CFTC or exchanges currently have authority to place position limits on a derivative dealer's clients, if those clients do not directly trade on a commodity exchange?

*RESPONSE: The CFTC's position limit-setting authority is limited, under CEA Section 4a(a), to positions established on CFTC-registered exchanges (e.g., contract markets, exempt commercial markets with significant price discovery contracts) and, accordingly, does not reach OTC derivative positions.*

- c. What is the quality of the data that the CFTC currently receives from derivative dealers on the trades undertaken by their clients? Could this data be used to place, track, and enforce position limits on those clients?

*RESPONSE: The data is submitted under threat of penalties and is believed to be reliable, but we have not had the resources to perform on-site audits of the books and records of the reporting derivative dealers. The special call OTC data combined with the Commission's daily large-trader data would be useful for monitoring position limits, with the important limitation that the special call data is currently collected only on a monthend basis.*

- d. In order for client-specific position limits to work, could the exchanges monitor, aggregate, and enforce those limits, or would the CFTC have to perform those duties since individual clients may trade on multiple exchanges? Does the CFTC currently have the resources and personnel needed to perform those types of duties?

*RESPONSE: Even if the Commission shared its OTC data (from the special call or similar source) with the exchanges, it does not appear to be feasible for an exchange to enforce a limit across other exchanges and the OTC market. The Commission would be*

*in a position to do so. We do not currently have sufficient resources to undertake such a program.*

- e. Does the CFTC have any data that would indicate that positions limits placed on derivative dealers' clients would decrease the number of futures contracts purchased in the Chicago market?

*RESPONSE: The number of affected clients, across U.S. physical commodity markets, appears to be relatively small.*

- f. What is your view of the relative advantages and disadvantages of imposing position limits on derivative dealers versus their clients?

*RESPONSE: The Commission has begun a major review of hedge exemptions and speculative limits on futures contracts on physical commodities with a focus, at this time, on energy commodities. In addition to its internal review of hedge exemptions and no-action letters, the Commission held three days of hearings on speculative trading in the energy markets. Issues that you have raised on the ability and desirability of looking through swaps dealers and exchange traded funds to the size of their individual customers were raised by witnesses at these hearings. These issues as well as the Commission's legal authority over such customers and the effect of limits on the markets are significant. As your question indicates, the Commission will need to consider those issues as it moves forward. The Commission is expected to consider whether to propose speculative limits on any of the markets it regulates, what those limits should be, how they should be applied and what, if any, exemptions should be allowed. The Commission is still in the process of reviewing the record of our hearings on position limits. At this time it would be premature to state how the Commission will act on any of these major issues.*

# # #